

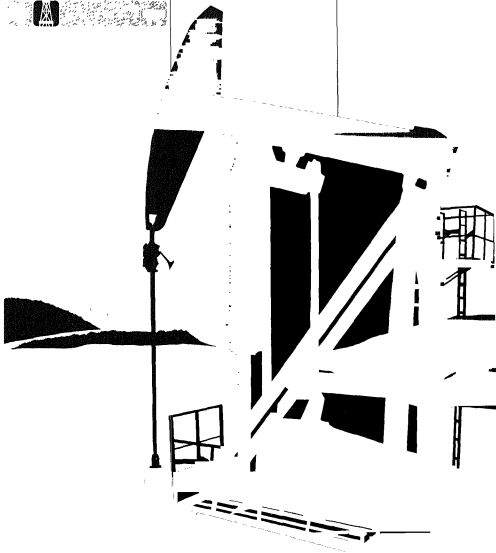
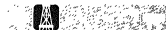


# Petroleum Supply Monthly

Energy Information Administration  
Office of Oil and Gas  
U.S. Department of Energy



September 1982



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# Petroleum Supply Monthly



Energy Information Administration  
Office of Oil and Gas  
**U.S. Department of Energy**



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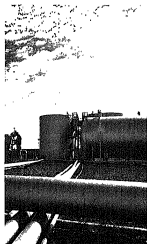
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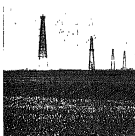
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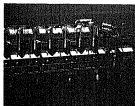


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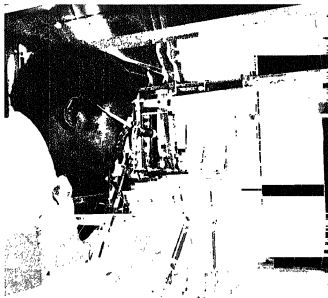
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# Petroleum Focus



# Overview

## July 1982 Petroleum Supply Summary

In July 1982, crude oil<sup>1</sup> and natural gas liquids plant production averaged 10.2 million barrels per day, up slightly from the 10.0 million barrels per day during the same period in 1981. During July, 1982, petroleum products supplied (a proxy for consumption) averaged 14.8 million barrels per day, down 5.8 percent from the 15.7 million barrels daily average for July of 1981. Refinery inputs of crude oil for July 1982 averaged 12.4 million barrels per day, a 1.6 percent increase over the previous July. Daily operable crude oil distillation capacity in July 1982 averaged 17.1 million barrels daily, compared with 18.7 million barrels daily a year earlier. The refinery utilization rate was 75.2 percent in July 1982, compared with 67.4

percent one year earlier. Total petroleum net imports in July 1982 averaged 5.0 million barrels per day, and the year-to-date level averaged 4.1 million barrels per day, compared with 5.5 million barrels per day for the first 7 months in 1981. Petroleum product stocks at the end of July 1982 were lower than year earlier levels, 782 million barrels compared with 880 million barrels. July 1982 residual fuel oil stocks were 10 million barrels lower than those a year earlier; and inventories of total motor gasoline at the end of July 1982 were 2 million barrels below the July 1981 level.

<sup>1</sup>Including lease condensate.

### Petroleum Supply Summary

Average volume for Period (Million Barrels Per Day)	July			Cumulative January Through July		
	1982	1981	% Change	1982	1981	% Change
Total Product Supplied	14.8	15.7	-5.8	15.4	16.3	-5.1
Gasoline	6.8	6.8	-0.4	6.5	6.8	-0.7
Distillate Fuel Oil	2.1	2.4	-12.4	2.8	2.9	-3.6
Residual Fuel Oil	1.5	2.0	-25.0	1.8	2.2	-17.0
Crude Inputs to Refineries	12.4	12.3	1.5	11.8	12.5	-6.0
Crude Oil and Natural Gas Liquids Production	10.2	10.0	1.2	10.2	10.2	0.2
Net Imports <sup>1</sup>	5.0	5.2	-4.3	4.1	5.5	-24.7
Net Crude Oil Imports <sup>2</sup>	3.9	3.9	1.4	3.0	4.0	-25.7
SPR Imports	0.1	0.2	-44.6	0.2	0.2	-25.0
Net Product Imports	1.0	1.2	-18.7	1.0	1.3	-21.3
Crude Oil Stock Withdrawal <sup>3</sup>	-0.06	-0.04	—	0.09	-0.03	—
Product Stock Withdrawal	-0.9	0.1	—	0.5	0.3	—
Stocks at End of Period (Million Barrels)						
Crude Oil <sup>4</sup>	345	388	-10.7			
Gasoline <sup>4</sup>	226	228	-0.7			
Distillate Fuel Oil	148	186	-20.6			
Residual Fuel Oil	69	89	-15.0			
Total Product	782	860	-11.1			
SPR	267	173	54.3			
Total	1,394	1,439	-3.1			

<sup>1</sup>Gross imports of crude oil (including Strategic Petroleum Reserve) and petroleum products less exports of crude oil and petroleum products.

<sup>2</sup>Excluding Strategic Petroleum Reserves (SPR).

<sup>3</sup>Including blending components.

Note: Percent changes are based on unrounded values.

Source: Energy Information Administration, U.S. Department of Energy, *Petroleum Supply Monthly*, September 1982.

## Refinery Shutdowns During 1982

The June issue of the Petroleum Supply Monthly highlighted refinery activities in 1981. It indicated that between January 1, 1981 and January 1, 1982, twenty-three refineries having a combined capacity greater than 450,000 barrels per day, were permanently shut-down.

At the beginning of 1982, operable refinery capacity totalled 17.9 million barrels per day. A portion of this operable capacity (1.8 million barrels per day) was idle but capable of restarting within 90 days.

During 1982, the pace of permanent shutdowns has quickened (see Table 1 below). In particular, for the June and July report periods, 37 refineries, having a combined capacity of 841,000 barrels per day, were declared permanently shutdown. The total permanent shutdowns for the year is now at 44 refineries. Table 2 below lists these refineries. Contacts with other refineries indicate that by the end of 1982 it is expected that 52 refineries having a combined capacity of 1.2 million barrels per day will have been permanently shut-down.

**Table 1. Refinery Operations in 1981 and 1982**

	Operable		Operating		Idle		Permanently Shutdown	
	# Ref.	Capacity MB/D	# Ref.	Capacity MB/D	# Ref.	Capacity MB/D	# Ref.	Capacity MB/D
During 1981							23	451
January 1, 1982	301	17,890	254	16,104	47	1,786	0	0
February 1, 1982	299	17,063	250	16,295	49	1,747	2	30
March 1, 1982	296	17,071	249	16,131	46	1,841	4	9
April 1, 1982	294	17,987	245	16,066	49	1,803	1	14
May 1, 1982	284	17,971	246	16,974	48	1,997	0	0
June 1, 1982	286	17,567	245	16,997	43	1,590	7	426
July 1, 1982	288	17,146					30	415
Jan-Jul, 1982							44	584
Aug-Dec, 1982	250	16,979					8	287
1982 Total (est.)							52	1,161

<sup>1</sup>Includes one new refinery with capacity of 3,000 barrels per day.

Source: Form EIA-87 "Refinery Report."



**Table 2. Refineries Permanently Shutdown since January 1, 1982**  
(Barrels per Calendar Day)

Refineries	Location	Crude Distillation Capacity	Date Shutdown
<b>PAD District I</b>			
Amoco Oil Co.	Baltimore, Maryland	15,000	7/82
Seminole Refining Inc.	St. Marks, Florida	15,000	7/82
Total		30,000	
<b>PAD District II</b>			
Amoco Oil Co.	Sugar Creek, Missouri	104,000	7/82
Ashland Oil Inc.	Findlay, Ohio	20,400	7/82
CRA, Inc.	Scottsbluff, Nebraska	5,800	7/82
Dillman Oil Recovery Inc.	Oblong, Illinois	1,200	3/82
E-Z Serv Refining Inc.	Shallow Water, Kansas	9,500	7/82
Energy Cooperative Inc.	East Chicago, Indiana	126,000	8/82
Industrial Fuel & Asphalt of Indiana Inc.	Hammond, Indiana	8,187	8/82
Kentucky Oil & Refining Co.	Betsy Lane, Kentucky	3,000	7/82
Mid-America Refining Co. Inc.	Chanute, Kansas	3,500	7/82
Northland Oil & Refining Co.	Dickinson, North Dakota	5,000	2/82
Texasco Inc.	West Tulsa, Oklahoma	50,000	7/82
Texas American Petro- chemicals Inc.	West Branch, Michigan	11,500	7/82
Total		347,887	
<b>PAD District III</b>			
Bayou State Oil Corp.	Houston, Louisiana	3,000	8/82
Bronco Refining Co.	Houston, Texas	2,500	7/82
Carlou-For Corners Oil Co.	Kirtland, New Mexico	2,500	7/82
Clinton-Manges	Palastina, Texas	10,000	7/82
Copene Refining Co.	Ingleside, Texas	11,100	7/82
Dow Chemical U.S.A.	Freeport, Texas	190,000	8/82
Eagle Refining Corp.	Jacksboro, Texas	1,800	7/82
Independent Refining Corp.	Pt. Neches, Texas	30,000	8/82
Independent Refining Corp.	Winnie, Texas	50,000	8/82

**Table 2. Refineries Permanently Shutdown since January 1, 1982—Continued**

(Barrels per Calendar Day)

Refineries	Location	Crude Distillation Capacity	Date Shutdown
<b>PAD District III—Cont.</b>			
Lake Charles Refining Co.	Lake Charles, Louisiana	28,000	7/82
Longview Refining Co.	Longview, Texas	14,000	4/82
Petraco-Valley Oil & Refining Co.	Brownsville, Texas	12,300	7/82
Rio Grande Crude Refining	Brownsville, Texas	9,500	6/82
Rio Grande Recovery Systems Inc.	Brownsville, Texas	1,000	7/82
Sentry Refining Inc.	Corpus Christi, Texas	26,000	2/82
Shepard Oil Co.	Jennings, Louisiana	10,000	7/82
Sooner Refining Co.	Darrow, Louisiana	8,000	7/82
TARCO	Eulea, Texas	8,000	7/82
T & S Refining Inc.	Jennings, Louisiana	11,500	7/82
Tippersry Refining Co.	Ingleside, Texas	10,400	7/82
Wickett Refining Co.	Wickett, Texas	8,000	7/82
<b>Total</b>		<b>444,600</b>	
<b>PAD District IV</b>			
C & H Refinery Inc.	Lusk, Wyoming	190	7/82
Glacier Park Co.	Osage, Wyoming	4,160	3/82
Morrison Petroleum Co.	Woode Cross, Utah	6,300	7/82
Sage Creek Refining Co.	Cowley, Wyoming	1,200	7/82
Texaco Inc.	Casper, Wyoming	21,000	7/82
<b>Total</b>		<b>32,850</b>	
<b>PAD District V</b>			
Gibson Oil & Refining Co.	Bakersfield, California	4,600	7/82
Lundsey-Thagard Oil Co.	South Gate, California	12,000	6/82
United Independent Oil Co.	Tacoma, Washington	790	3/82
West Coast Oil Co.	Oildale, California	21,000	7/82
<b>Total</b>		<b>38,330</b>	
<b>United States, Total</b>		<b>893,667</b>	

Source: Form EIA-87, "Refinery Report".



# Petroleum Focus

## Distillate Fuel Oil Outlook: Winter 1982-83

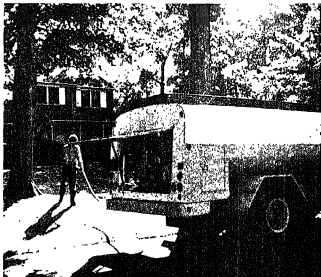
As the winter 1982-83 heating season approaches attention turns to the adequacy of heating oil stocks. A basic concern is whether supplies of heating oil this winter will be sufficient to meet U.S. demand. A second concern is whether low inventories of heating oil will make the distribution system vulnerable to a sudden cold spell or a localized transportation problem. Such situations could cause short-term regional shortages or larger-than-expected increases in heating oil prices.

Preliminary data indicate that the level of anticipated inventories should be adequate, but that the cushion of extra inventories is smaller than in previous years. However, since current inventories of crude oil are relatively high in terms of days of supply, and refineries are producing well below their maximum capacity, potential supplies are expected to be sufficient to meet even the extra demands of colder weather and stronger economic growth. Supplies of heating oil should be adequate, unless there is some drastic reduction in the worldwide availability of crude oil or in the willingness and ability of U.S. refineries to produce heating oil.

If demand is higher than expected during the winter heating season and stock levels fall more rapidly than expected, industry can adjust by:

- Drawing down crude oil stocks and increasing the rate of refinery utilization. Crude oil stocks at the end of August were 356 MMB, well within the average range for this time of year. Refinery utilization of 68 percent during the first 8 months of 1982 is well below recent historical peaks which have been as high as 88 percent in 1978.
- Importing more distillate from outside the United States. Current distillate imports are well below the peak of more than 650 MB/D in February 1977. Presently, Europe has more excess refining capacity than the United States.
- Changing present refinery yields to produce more distillate.

These options provide industry with considerable flexibility to respond to increases in demand.



## Recent Trends in Fuel Oil

This article reviews recent trends in the demand for, and supply of distillate and residual fuel oils, the two principal petroleum products used for heating in the United States. The uses of these petroleum products have changed significantly since 1977, the year of peak consumption. In that year, less than 40 percent of all distillate was consumed by the transportation sector (e.g., automobiles, vessels, and railroads), whereas by 1981 more than half of all distillate supplied was consumed for transportation, reflecting decreased heating use. Although one of the principal uses of distillate has been space heating, less than one gallon in five (19 percent) of all distillate supplied in 1981 was used for residential heating.

### Recent Trends in Demand

Demand for distillate fuel oil peaked in 1978 at about 3.4 million barrels per day and fell to about 2.8 million barrels per day by 1981 (see Table 1). This decrease of about 17 percent in three years can be attributed to changes in variables affecting distillate consumption; i.e., prices, economic activity, weather, and conservation effects. By far the most influential variable over the 1978-1981 pe-

riod was price. In real terms, residential heating oil prices rose more than 75 percent over the 1978-1981 period—an annual average increase of over 20 percent.

Price increases can affect quantities demanded in several ways:

- Utilization of fuel-burning equipment decreases as consumers and businesses "do without." This is typically a very short-term response.
- Existing equipment is run using alternative, less costly fuels. This is also typically a short-term response, and generally applies only to those establishments which have invested in dual-fired boilers and furnaces.
- Embodied and disembodied technological changes are made to existing equipment or the environment in which it is used. An example of an embodied change is cleaning and adjusting furnaces and boilers to make them more efficient. An example of a disembodied change is adding more insulation to a home or office building.

**Table 1. Distillate Fuel Oil Supply and Demand: 1978-1982**  
(Million Barrels per Day)

Year/ Quarter	Product Supplied (Apparent Demand)	Production	Net Imports <sup>1</sup>	Stock Withdrawals <sup>2</sup>
1978	3.45	3.17	0.17	0.09
1979	3.31	3.15	0.19	-0.03
1980	2.87	2.88	0.14	0.08
1981 - I	3.46	2.76	0.24	0.48
- II	2.47	2.46	0.17	-0.18
- III	2.43	2.55	0.16	-0.23
- IV	2.96	2.69	0.11	0.17
- Average	2.83	2.61	0.17	0.04
1982 - I	3.16	2.45	0.00	0.69
- II	2.65	2.67	0.01	0.03
- Average <sup>3</sup>	2.89	2.51	0.01	0.36

<sup>1</sup>Negative numbers indicate that exports exceeded imports.

<sup>2</sup>Negative numbers indicate stock additions.

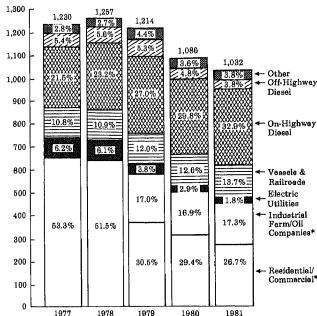
<sup>3</sup>January-June 1982.

Note: Beginning in January 1981 BIA modified survey forms, definitions, and processing procedures. See Explanatory Note 4.

Sources: BIA, *Petroleum Supply Annual* 1981 and *Petroleum Supply Monthly* (for 1982).



**Exhibit 1. Deliveries of Distillate Fuel Oil by Use  
as Percent of Total (Millions of Barrels)**



Source: EIA, *Petroleum Supply Annual 1981*

\*These were a single category prior to 1979.

These changes typically take place over a longer period of time and have a more lasting impact.

- Purchase and installation of new, more efficient fuel-burning equipment. Because of the cost involved, this is typically a long-term investment decision. Once the investment has been made, its impact will be felt for many years.

A Residential Energy Consumption Survey<sup>1</sup> conducted by the Energy Information Administration (EIA) in 1980 and 1981 indicated that during the April 1979-March 1980 period, an estimated 1.3 million households, or 8.2 percent of all households then heating with fuel oil or kerosene, switched to other fuels, mainly wood and natural gas, as their main source of heat. In addition, during

1978-1979, approximately 1.9 million households heating with fuel oil or kerosene added attic insulation; 1.6 million added storm windows and/or storm doors; and 0.7 million added wall insulation. These data indicate a significant trend toward both fuel-switching and conservation by residential consumers of fuel oil.

Consumption of distillate fuel oil is shifting from the traditional fuel oil use for space heating, industrial purposes, and electricity generation toward increased usage in the transportation sec-

<sup>1</sup>Energy Information Administration, Department of Energy, Residential Energy Consumption Survey: Report Numbers: DOE/EIA-0207/5, July 1980; DOE/EIA-0262/1, April 1981; DOE/EIA-0314, June 1982.

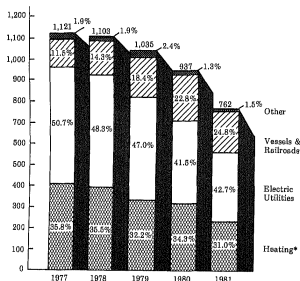
tor (see Exhibit 1). On-highway diesel had the most dramatic increase, 28 percent from 1977 to 1981 while electric utility use declined 76 percent during the same period. In 1981, diesel fuel accounted for over 50 percent of the distillate fuel oil consumption. This reflects both the increase in the diesel penetration of the private and commercial automobile fleet, and the overall decline in demand over the 1978-81 period.

The latest demands (through mid-1982) show an apparent leveling off of the decline in consumption noted earlier. Falling prices and anticipation of price increases contributed to a slight increase (about 5 percent) in product supplied between the second quarter of 1981 and the second quarter of 1982. Despite a colder-than-normal winter, first quarter demand in 1982 was down 9 percent from year-earlier levels, largely because

of lower first-quarter economic activity. Another factor in the leveling off of the distillate demand decrease is the likelihood that consumer actions such as adding insulation, retrofitting, and doing without have already been completed, and that further efficiencies will occur more slowly as the current stock of fuel-burning equipment is replaced over the next several years.

Exhibit 2 indicates changes in the composition of residual fuel oil consumption. The commercial, industrial, and oil company sectors together declined 400,000 barrels per day, or 38 percent between 1978 and 1981. Consumption by the transportation sector in 1981 accounted for about 25 percent of total demand. Consumption by electric utilities declined 570,000 barrels per day, or almost 40 percent, between 1978 and 1981

**Exhibit 2. Deliveries of Residual Fuel Oil by Use as Percent of Total (Millions of Barrels)**



\*Includes Oil Companies, Commercial, and Industrial

Source: EIA Petroleum Supply Annual, 1981

**Exhibit 3. Electricity Generation by Source: 1978-1981**  
(Billion Kilowatt Hours)



Source: Energy Information Administration, U.S. Department of Energy, *Monthly Energy Review*, August 1982, p. 86.

(Exhibit 3). Utility companies shifted from electricity generation using petroleum to generation using other energy sources. While electricity generation increased by 4 percent between 1978 and 1981, generation using petroleum declined 44 percent. Coal and natural gas more than made up the decline although generation by natural gas stopped growing in 1981, while growth in electricity generation using coal continued to be strong.

The greatest demand levels for residual fuel oil were about 3.0 million barrels per day in 1977 and in 1978. By 1981 (see Table 2), demand had dropped to about 2.09 million barrels per day, a decrease of about 32 percent in 3 years. A major determinant in the decline was price, which nearly doubled in real terms over the 3-year period, 1979-1981.

## Recent Trends in Supply

Production, net imports, and net stock withdrawals comprise the supply of distillate fuel oil. Production of distillate declined 18 percent between 1978 and 1981, slightly more than the 12 percent decline in refinery production of all petroleum products over this period (see Table 3). Coincidental with the decline in distillate production was a reduction in refinery utilization from a rate of 87.8 percent in 1978 to 68.6 percent by 1981. This reflects the decrease in general demand for petroleum products over the period. Refinery inputs of crude oil fell 15 percent, and overall petroleum product demand declined 15 percent during the 3 years.

Distillate imports, while fluctuating from year to year, averaged 173,000 bar-

**Table 2. Residual Fuel Oil Supply and Demand: 1978-1982**  
(Million Barrels per Day)

Year	Product Supplied	Production	Net Imports	Stock Withdrawals <sup>1</sup>
1978	3.02	1.87	1.14	-0.00
1979	2.83	1.69	1.14	-0.02
1980	2.61	1.58	0.91	0.01
1981 - I	2.54	1.53	0.78	0.18
- II	1.91	1.26	0.64	0.06
- III	1.90	1.23	0.74	-0.12
- IV	2.01	1.26	0.67	0.02
- Average	2.09	1.32	0.68	0.04
1982 - I	2.10	1.15	0.67	0.23
- II	1.84	1.12	0.50	-0.04
- Average <sup>2</sup>	1.87	1.13	0.58	0.10

<sup>1</sup>Negative numbers indicate stock additions.

<sup>2</sup>January-June 1982.

Note: Beginning in January 1981, EIA modified survey forms, definitions and processing procedures. See Explanatory Note 4.

Sources: EIA, *Petroleum Supply Annual* 1981 and *Petroleum Supply Monthly* (for 1982).

**Table 3. Distillate & Residual Fuel Oil Production and Total Refinery Production: 1978-1982**  
(Million Barrels per Day)

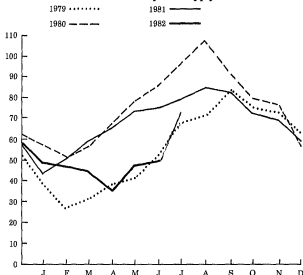
Year	Total Refinery Production	Distillate Fuel Oil Production	Residual Fuel Oil Production
1978	16.97	3.17	1.67
1979	15.76	3.15	1.69
1980	14.62	2.86	1.58
1981	13.39	2.61	1.32
1982 <sup>2</sup>	13.16	2.51	1.13

<sup>2</sup>January-June 1982.

Note: Beginning in January 1981, EIA modified survey forms, definitions and processing procedures. See Explanatory Note 4.

Sources: EIA, *Petroleum Supply Annual* (for 1978-1981); *Petroleum Supply Monthly* (for 1982)

#### Exhibit 4. Distillate Fuel Oil Days of Supply: 1979-1982



Sources: Energy Information Administration, U.S. Department of Energy, *Petroleum Statement, Annual*, 1979 and 1980; *Petroleum Supply Annual* 1981; and *Petroleum Supply Monthly*, (for 1982).

rels per day in 1981, the same level as in 1978. In 1982, market conditions have enabled the United States, for the first time in several years, to export significant quantities of distillate to Mexico, Japan, and Western Europe.

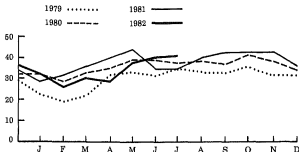
Stock levels of distillate normally follow a pattern of buildups in the late spring and summer, and drawdowns in the fall and winter. The seasonal patterns remain fairly constant from year to year. During the past few years, however, stock levels have dropped successively. Distillate stocks during 1981 and 1982 were lower each month than during the corresponding period a year earlier. Year-end stocks in 1981 stood at 192 million barrels, 11 percent below ending stocks in 1978, and 16 percent below 1979 levels. Reasons for the lower levels of stocks held by primary suppliers over

the last several years include:

- Higher interest rates, making inventory holdings more costly;
- Lower production rates due to a general softening of demand, as discussed earlier; and
- Increased stocks of crude oil, evidently preferred by refiners to product stocks as a buffer in a period of generally adequate supplies.

Although stocks of distillate have been lower, available days of supply of distillate (primary stocks divided by daily average product supplied) have not shown the same decline (see Exhibit 4). Particularly, in the September-December period of each of the 8 years 1979-1981, the number of available days of supply has been roughly similar—

### Exhibit 5. Residual Fuel Oil Days of Supply



Sources: EIA, *Petroleum Statement Annual*, 1979 and 1980; *Petroleum Supply Annual*, 1981; and *Petroleum Supply Monthly*, (for 1982).

dropping from about 80 days at the end of September to about 60 days by year's end. During the remainder of the year, days of supply largely reflect the severity of the winter, with the cold winters of both 1978-1979 and 1981-1982 yielding only 40 days of supply available by the end of April of 1979 and 1982, respectively.

Residual fuel oil (residual) production declined 21 percent between 1978 and 1981. It is significant, however, that residual production, unlike that of distillate, was supplying 83 percent of residual fuel demand by 1981, compared with 65 percent in 1978. This reflects the substantial decline in net imports, occurring this period, which fell 50 percent to 680,000 barrels per day in 1981. The beginning of the decline in net imports coincided with the end of the entitlements program. In addition, the removal of export limitations (in October 1981) led to increases in the exportation of residual oil.

End of year stocks of residual fuel oil, which peaked at 96 million barrels in 1979, fell to 78 million barrels by the end of 1981, a decline of 19 percent. As with distillate, end-of-month stocks were successively lower each month in 1981 and 1982 than in the previous year. Again, this reflects lower prices and demand,

and adequate crude oil stocks. As seen in Exhibit 5, however, the decline in residual consumption has meant that available days of supply have been higher each year since 1979. Although available days of supply fell by April of this year to less than 30 days, days of supply in May rose to 38 days due mostly to a continuing decrease in demand. This is still lower than in 1981, but higher than in the corresponding months of 1979 and 1980.

### Conclusion

Demand for both distillate and residual fuel oils has dropped over the past few years, and end-use consumption patterns have changed. The use of distillate fuel oil for heating and the use of residual fuel oil for electrical generation has decreased substantially as traditional customers have shifted to other fuels. In contrast, distillate use for transportation has been increasing.

The general decrease in the use of distillate and residual fuel oils in the domestic market is having a favorable influence on the energy balance of trade, as less product is being imported than in the past several years, and more product is being exported. Based on days of supply measures, current levels of inventories are within historic ranges.

## What are Futures?

Futures are contracts for the delivery of a specified quantity of a commodity on a specified date in the future, at a price which is agreed upon when the contract is executed. The quality of product and the delivery points that will satisfy the contract are also indicated.

Futures contracts differ from more common contractual arrangements in that the contracting parties need never meet one another or, indeed, even know who their counterparts are. Further, a most important feature of futures trading is that contracts may be resold many times before the specified delivery date. That is, a futures contract has a market value that is independent of the delivery price specified in the contract.

Firms and individuals use futures both to "hedge" against future price and supply uncertainty and to "speculate" on expected price trends. As a tool to reduce supply uncertainty, the use of futures contracts is straightforward—the contract guarantees delivery of a certain volume on a certain date. The

use of futures to reduce price uncertainty is more complicated and involves both "short" and "long" hedgers. A short hedger sells a futures contract to "lock in" the price he will receive either for his inventories or for his planned future production. A long hedger buys a futures contract to "lock in" his future product costs. It is important to understand that the use of futures to hedge against price uncertainty does not require that the firm either take or make delivery of a physical barrel of oil.

The efficient use of futures for price-risk hedging is based on the condition that the value of a firm's cash market position will change by an equal but opposite amount to that of an appropriate futures position. In the long run, the net gain from a successful hedging operation should be zero—the firm neither loses nor profits from any change in cash market prices. Thus, as important as the capability of avoiding major, unexpected losses, hedging in futures enables firms to plan and budget more accurately for their future operations.

# Futures Trading on Heating Oil Markets

## History

Activity in oil futures trading has accelerated considerably since a No. 2 heating oil futures contract was introduced on the New York Mercantile Exchange (NYMEX) in late 1978. Currently there are petroleum futures markets in heating oil, residual fuel oil, leaded and unleaded gasoline, and propane.

In its first year, the NYMEX No. 2 heating oil futures contract experienced only light trading volume (10-100 contracts daily).<sup>1</sup> In September 1979, the trading volume and open interest (the number of active contracts) and the quantity of oil involved began increasing substantially (see Exhibit 1). Three reasons for this increased activity are:

- The disruption of Iranian oil supplies, which began in 1979, provoked price uncertainty and attracted speculators as well as industry hedgers to the market. World oil prices nearly doubled in 1979, but the rate of price increase in the last quarter was especially sharp.
- Large heating oil inventories had been built up by fall 1979, partly in response to government inducements to build supplies for the upcoming winter. There had been general concern about the adequacy of heating oil stocks after nationwide motor gasoline shortages that summer. Oil jobbers and distributors felt a need to hedge these substantial inventories.
- When the Iran-Iraq conflict began in September 1980, the No. 2 heating oil futures market had been around long enough for industry and potential speculators to observe sufficient "liquidity" (i.e., a sufficient volume of trading to ensure that a futures position may be easily closed) in the market and to gain confidence in the use of the contracts. With the tremendous

uncertainty concerning world oil supplies that arose with the outbreak of the Persian Gulf war, there also arose tremendous opportunities for speculation.

Both the number of contracts and the volume of oil represented by No. 2 heating oil futures contracts for New York Harbor delivery increased rapidly after September 1980. By March 1981, the monthly trading exceeded 89,000 contracts and by April 1982, the daily trading volume reached a NYMEX record of 14,000 contracts. The availability of excess crude oil on the world market, which became apparent early in 1981, increased the need to hedge inventories, helping to sustain both trading volume and open interest.

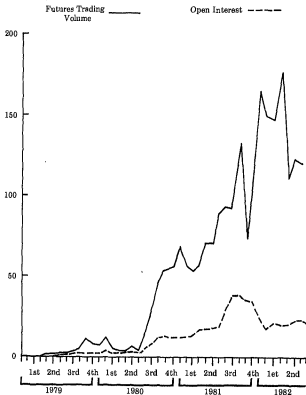
NYMEX trading in heating oil contracts for Gulf Coast delivery was initiated in August 1981. Activity is still much lower than that for the New York Harbor contracts.

## Impacts on Inventory Strategy

The emergence of an active futures market in heating oil may be influencing the inventory strategies of producers, distributors, and end-users. By purchasing a futures contract, a distributor or end-user can guarantee it will receive a certain volume of product on a given date. Thus, the firm's need to maintain stocks in order to ensure adequate product availability on that date is reduced. At the same time, a producing firm that has high inventories, but is concerned about the possibility either of not being able to sell those stocks or of the future sales price declining, may protect the value of its stocks by selling futures contracts. In this case, the producer may maintain higher inventories than it would if there were no futures market. The buying and selling of futures contracts by hedgers at different levels in the industry has the effect of redirecting where stocks will be maintained. Speculators assist this process in a major way, by compensating for any net difference between hedging sales and purchases with their own purchases and sales. In general, the risk transference made possible by futures hedging, in conjunction with a more efficient dis-

<sup>1</sup>Each contract is for 1,000 barrels of heating oil (42,000 gallons) and is priced in cents per gallon. Each cent change reflects the gain or loss of \$420 per contract.

**Exhibit 1. No. 2 Heating Oil Futures Trading Volume  
and Open Interest**  
(Thousand Contracts)



Source: New York Mercantile Exchange

tribution of product inventories, may be expected to result in generally lower optimal stock levels as the volume of futures hedging activity increases.

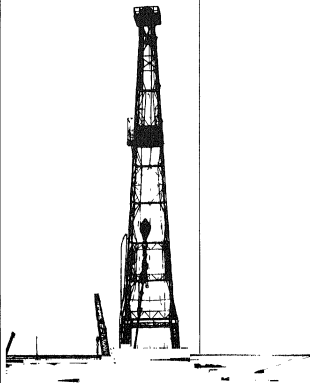
### Impacts on Pricing Strategy

Proponents of energy futures contracts believe that hedging in futures is changing the way the petroleum industry prices its products. As participation in the No. 2 heating oil market by the petroleum industry has increased, it is be-

lieved that futures prices are becoming more widely accepted indicators of free market product values than are spot market quotations. Normal delivery contracts can be based upon futures market prices instead of "posted" spot market prices, as is now the case. In addition, major oil companies may begin using futures market prices to determine internal transfer prices between affiliates. Finally, the once common fixed-price oil contract could re-emerge due to futures market hedging.



# Summary Statistics



# Crude Oil<sup>1</sup> and Petroleum Products Overview

		Field Production			Stock Withdrawal <sup>2</sup>		Petroleum Products Supplied	Crude Oil <sup>3</sup> and Petroleum Products	Ending Stocks <sup>3</sup>
		Total Domestic <sup>4</sup>	Crude Oil	Natural Gas Plant Production	Crude Oil <sup>5</sup>	Petroleum Products			
									Thousand Barrels per Day
1973	AVERAGE	10,875	8,208	1,736	11	-148	17,306	1,008	
1974	AVERAGE	10,486	8,774	1,688	-82	-117	16,853	1,074	
1975	AVERAGE	10,045	8,378	1,633	-17	-145	16,322	1,133	
1976	AVERAGE	9,774	8,132	1,603	-38	98	17,481	1,112	
1977	AVERAGE	9,913	8,245	1,618	-170	-378	18,431	1,312	
1978	AVERAGE	10,326	8,707	1,587	-78	172	18,847	1,278	
1979	AVERAGE	10,179	8,552	1,584	-148	-25	18,513	1,341	
1980	January	10,377	8,675	1,548	-594	270	18,851	1,381	
	February	10,402	8,705	1,558	-282	860	18,817	1,343	
	March	10,303	8,698	1,588	-47	-99	17,377	1,348	
	April	10,358	8,686	1,630	-412	-229	15,784	1,367	
	May	10,298	8,635	1,615	-117	-520	15,238	1,387	
	June	10,184	8,554	1,581	65	-889	18,187	1,411	
	July	10,113	8,547	1,524	88	-556	16,008	1,425	
	August	9,974	8,414	1,519	-274	-473	15,753	1,449	
	September	10,184	8,619	1,515	307	-259	16,598	1,447	
	October	10,062	8,592	1,516	-191	758	16,935	1,430	
	November	10,108	8,495	1,571	-8	-84	16,702	1,432	
	December	10,204	8,608	1,560	304	993	18,410	1,392	
AVERAGE		10,214	8,597	1,573	-96	-42	17,056		
1981	January	10,231	8,540	1,652	50	1,159	18,430	1,388	
	February	10,284	8,604	1,653	-278	250	16,989	1,389	
	March	10,272	8,613	1,624	-632	224	15,907	1,401	
	April	10,195	8,557	1,599	-595	148	15,350	1,415	
	May	10,160	8,501	1,593	-391	-574	15,353	1,438	
	June	10,287	8,628	1,594	-135	405	16,055	1,430	
	July	10,038	8,503	1,548	-360	91	15,682	1,439	
	August	10,243	8,553	1,614	397	-999	15,263	1,457	
	September	10,251	8,504	1,612	-285	-341	15,635	1,476	
	October	10,225	8,563	1,598	-760	477	15,822	1,485	
	November	10,209	8,556	1,630	-325	-233	15,593	1,501	
	December	10,220	8,565	1,560	-170	745	16,598	1,484	
AVERAGE		10,230	8,572	1,609	-230	130	16,058		
1982	January	10,257	8,669	1,548	-236	1,129	15,890	1,481	
	February	10,261	8,690	1,524	-218	1,268	15,941	1,431	
	March	10,212	8,597	1,570	-65	1,049	15,580	1,401	
	April	10,295	8,652	1,588	107	1,694	16,048	1,350	
	May	10,223	8,680	1,520	49	-34	14,845	1,349	
	June	10,242	8,681	1,505	88	-515	14,931	1,382	
	July*	10,226	R 8,549	1,521	R -155	R -865	R 14,771	R 1,394	
	August**	NA	8,737	NA	-407	-290	14,610	1,415	
AVERAGE		NA	8,686	NA	-104	405	15,318		

<sup>1</sup> Includes lease condensate.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup> Ending stocks for 1979-1979 are totals as of December 31.

<sup>4</sup> Includes crude oil, natural gas plant production, other hydrocarbons and alcohol.

<sup>5</sup> Includes stocks located in the Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised date.

\* See Explanatory Note 5.1.

\*\* Preliminary statistics. See Explanatory Note 2.7.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 60 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

Crude Oil<sup>1</sup> and Petroleum Products Overview ( continued )

		Importe <sup>2</sup>			Exporte <sup>3</sup>			Net <sup>5</sup> Imports
		Total	Crude Oil <sup>4</sup>	Petroleum Products	Total	Crude Oil	Petroleum Products	
Thousand Barrels per Day								
1973	AVERAGE	8,256	3,244	3,012	231	2	229	8,026
1974	AVERAGE	8,112	3,477	2,835	221	3	219	5,392
1975	AVERAGE	8,058	4,105	1,851	209	8	204	5,848
1976	AVERAGE	7,313	5,287	2,028	223	8	215	7,090
1977	AVERAGE	8,807	8,815	2,193	243	50	193	8,555
1978	AVERAGE	8,363	8,358	2,008	382	158	224	8,002
1979	AVERAGE	8,456	8,519	1,837	472	235	237	7,684
1980	January	8,586	6,406	2,192	550	322	228	8,046
	February	7,945	8,013	1,931	558	332	227	7,368
	March	7,452	5,685	1,757	573	330	243	6,879
	April	7,106	5,586	1,508	434	192	241	6,672
	May	6,579	5,106	1,472	591	326	268	5,687
	June	6,694	5,480	1,414	654	365	289	6,240
	July	6,257	4,843	1,414	531	238	293	5,727
	August	6,182	4,803	1,369	315	76	241	5,873
	September	6,239	4,707	1,532	557	322	235	5,682
	October	8,379	4,768	1,811	595	309	286	5,781
	November	8,406	4,860	1,725	549	269	280	5,656
	December	6,894	5,082	1,812	622	343	279	6,272
		AVERAGE	6,909	5,283	1,846	544	287	256
1981	January	6,827	4,932	1,895	558	339	219	6,270
	February	6,772	4,873	1,889	599	198	371	6,203
	March	6,028	4,521	1,507	585	210	376	5,442
	April	6,668	4,338	1,330	570	198	372	5,086
	May	5,775	4,287	1,489	595	312	283	5,180
	June	5,435	4,061	1,375	423	123	297	5,016
	July	5,816	4,296	1,521	571	257	314	5,246
	August	5,767	4,179	1,588	644	204	440	8,123
	September	8,365	4,740	1,824	519	184	325	5,645
	October	5,959	4,380	1,579	738	226	512	5,221
	November	5,741	4,046	1,895	701	275	423	6,041
	December	5,943	4,137	1,706	658	169	467	5,187
		AVERAGE	5,988	4,366	1,589	595	228	367
1982	January	5,232	3,646	1,585	820	238	581	4,404
	February	4,891	2,649	1,742	804	304	499	3,867
	March	4,481	2,656	1,806	682	321	581	3,579
	April	4,266	2,813	1,474	788	174	611	3,501
	May	4,784	3,314	1,471	603	282	642	3,661
	June	5,227	3,782	1,445	703	64	609	4,524
	July*	R 5,763	R 4,245	R 1,518	741	220	512	6,022
	August**	4,899	3,638	1,267	NA	NA	NA	NA
		AVERAGE	4,922	3,412	1,510	NA	NA	NA

<sup>1</sup> Includes lease condensate.

<sup>2</sup> Includes shipments from United States possessions and territories.

<sup>3</sup> Includes shipments to United States possessions and territories.

<sup>4</sup> Includes crude oil for storage in the Strategic Petroleum Reserve.

<sup>5</sup> Net Imports = Imports minus Exports.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

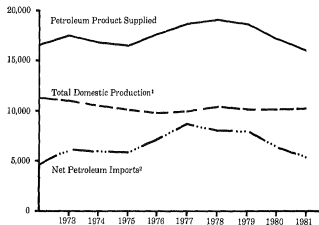
\* See Explanatory Note 5.1.

\*\* Preliminary Statistics. See Explanatory Note 2.7.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# **Petroleum Overview, Annual** (Thousand Barrels per Day)



<sup>1</sup>Includes crude oil and natural gas plant production.

<sup>2</sup>Includes SPR imports.

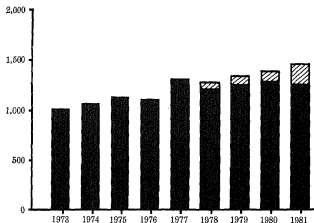
Source table: "Crude Oil and Petroleum Products Overview."

## **Crude Oil and Petroleum Products Ending Stocks, Annual** (Millions of Barrels)

### **Legend**

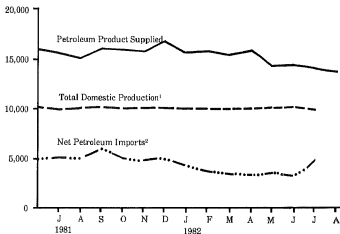
▨ SPR Crude Oil

■ Crude Oil and Petroleum Products, Excluding SPR



Source tables: "Crude Oil and Petroleum Products Overview" and "Crude Oil Supply and Disposition."

## Petroleum Overview, Monthly (Thousand Barrels per Day)



<sup>1</sup>Includes crude oil and natural gas plant production.

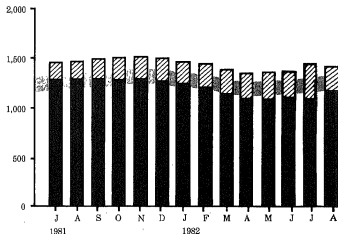
<sup>2</sup>Includes SPR imports.

Source table: "Crude Oil and Petroleum Products Overview."

## Crude Oil and Petroleum Product Ending Stocks, Monthly (Millions of Barrels)

### Legend

- SPR Crude Oil
- Crude Oil and Petroleum Products, Excluding SPR
- Average Stock Range<sup>1</sup>



<sup>1</sup>Average stock range (excluding SPR) based on 8 years of data. See Explanatory Note 2.5.

Source tables: "Crude Oil and Petroleum Products Overview" and "Crude Oil Supply and Disposition."

# Crude Oil<sup>1</sup> Supply and Disposition

		Supply						
		Field Production		Imports <sup>2</sup>			Stock Withdrawals <sup>3</sup>	
		Total Domestic	Alaskan	Total	SPR <sup>4</sup>	Other	SPR <sup>4</sup>	Other
		Thousand Barrels per Day						
1973	AVERAGE	3,208	198	3,244		3,244		11
1974	AVERAGE	3,774	193	3,477		3,477		-82
1975	AVERAGE	3,375	191	4,105		4,105		-17
1976	AVERAGE	3,132	173	5,287		5,287		-39
1977	AVERAGE	3,245	484	8,515	21	5,594	-20	-150
1978	AVERAGE	3,707	1,229	8,356	152	5,195	-183	84
1978	AVERAGE	3,552	1,401	5,519	87	5,452	-87	-81
1980	January	3,575	1,934	5,406	0	5,406	0	-594
	February	3,705	1,830	5,013	0	5,013	0	-292
	March	3,598	1,847	5,595	0	5,595	0	-47
	April	3,885	1,849	5,598	0	5,598	0	-412
	May	3,035	1,827	5,106	0	5,106	0	-117
	June	3,554	1,828	5,480	0	5,480	0	85
	July	3,547	1,612	4,843	0	4,843	0	88
	August	3,414	1,812	4,803	0	4,803	0	-274
	September	3,219	1,810	4,707	54	4,553	-54	381
	October	3,532	1,588	4,758	131	4,537	-123	-66
	November	3,495	1,561	4,580	142	4,538	-189	181
	December	3,205	1,802	5,082	198	4,884	-177	481
	AVERAGE	3,537	1,817	5,283	44	5,219	-45	-52
1981	January	3,540	1,808	4,932	106	4,826	-151	201
	February	3,204	1,519	4,873	80	4,793	-127	-150
	March	3,213	1,518	4,521	140	4,382	-155	-477
	April	3,557	1,508	4,336	272	4,065	-444	-151
	May	3,501	1,580	4,287	388	3,801	-513	122
	June	3,525	1,532	4,081	318	3,743	-434	299
	July	3,500	1,805	4,286	175	4,121	-324	-36
	August	3,583	1,802	4,179	257	3,922	-372	789
	September	3,804	1,807	4,740	435	4,305	-485	201
	October	3,583	1,698	4,380	453	3,927	-501	-259
	November	3,588	1,514	4,045	271	3,774	-259	-88
	December	3,585	1,623	4,137	165	3,971	-252	82
	AVERAGE	3,572	1,809	4,396	258	4,141	-338	48
1982	January	3,589	1,712	3,548	170	3,478	-159	-77
	February	3,890	1,715	2,949	159	2,790	-213	-3
	March	3,557	1,702	2,856	185	2,671	-236	170
	April	3,852	1,887	2,813	190	2,623	-233	341
	May	3,880	1,726	3,314	204	3,110	-176	225
	June	3,881	1,875	3,782	105	3,578	-105	191
	July*	R 3,849	R 1,718	R 4,245	R 97	R 4,147	R -58	R -58
	August**	3,731	1,701	3,638	199	3,439	-199	-202
	AVERAGE	3,838	1,704	3,412	164	3,248	-177	73

<sup>1</sup> Includes lease condensate.

<sup>2</sup> Includes shipments from United States possessions and territories.

<sup>3</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup> Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

\* See Explanatory Note 8.2.

\*\* Preliminary statistics. See Explanatory Note 2.7.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage. Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

Crude Oil<sup>1</sup> Supply and Disposition ( continued )

		Supply (Continued)		Disposition		Ending Stocks <sup>2</sup>		
		Unac- counted for Crude Oil	Crude Used Directly and Losses	Refinery Inputs	Exports <sup>3</sup>	Total Crude Oil	SPR <sup>4</sup>	Other Primary
		Thousand Barrels per Day				Millions of Barrels		
1973	AVERAGE	3	-32	12,431	2	242		242
1974	AVERAGE	-25	-28	12,193	3	265		265
1975	AVERAGE	17	-30	12,442	6	271		271
1976	AVERAGE	77	-33	13,416	6	265		265
1977	AVERAGE	-6	-30	14,602	50	348	7	340
1978	AVERAGE	-57	-30	14,739	166	376	97	369
1979	AVERAGE	-11	-29	14,848	235	430	91	339
1980	January	166	-31	14,301	322	446	91	359
	February	124	-31	14,167	332	457	91	366
	March	-276	-30	13,709	330	459	91	367
	April	-165	-29	13,464	192	471	91	360
	May	55	-26	13,326	326	475	91	363
	June	1	-30	13,705	365	473	91	361
	July	52	-29	13,264	238	470	91	379
	August	147	-26	12,964	78	475	91	367
	September	27	-26	13,313	322	469	93	376
	October	-3	-25	12,772	309	475	97	379
	November	266	-26	13,119	289	475	102	373
	December	24	-26	13,648	343	466	106	356
	AVERAGE	34	-26	13,461	267			
1981	January	113	-49	13,247	339	486	112	374
	February	-41	-56	12,902	196	494	116	376
	March	154	-63	12,363	210	514	121	393
	April	51	-62	12,091	198	632	134	387
	May	266	-82	12,309	312	544	150	384
	June	49	-65	12,415	123	546	163	386
	July	147	-65	12,361	257	659	173	389
	August	19	-63	12,908	204	547	165	362
	September	-285	-65	12,606	194	555	199	356
	October	166	-68	12,057	228	579	215	364
	November	279	-68	12,240	278	589	223	368
	December	52	-67	12,349	189	594	230	363
	AVERAGE	83	-63	12,470	226			
1982	January	-136	-66	11,638	236	606	236	571
	February	169	-66	11,252	304	612	241	571
	March	278	-66	11,277	321	614	249	566
	April	56	-66	11,366	174	611	266	566
	May	105	-66	11,801	282	609	261	546
	June	110	-67	12,458	94	607	264	543
	July*	1	-63	R 12,447	228	R 612	267	R 546
	August**	NA	NA	11,945	NA	630	274	556
	AVERAGE	NA	NA	11,786	NA			

<sup>1</sup> Includes lease condensate.<sup>2</sup> Ending stocks for 1973-1979 are totals as of December 31.<sup>3</sup> Includes shipments to United States possessions and territories.<sup>4</sup> Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

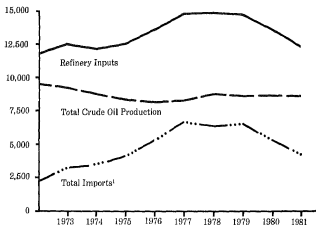
\* See Explanatory Note 5.2.

\*\* Preliminary statistics. See Explanatory Note 2.7.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

### Crude Oil Supply and Disposition, Annual (Thousand Barrels per Day)



<sup>1</sup>Includes SPR imports.

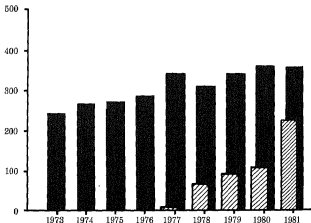
Source table: "Crude Oil Supply and Disposition."

### Crude Oil Ending Stocks, Annual (Millions of Barrels)

Legend

▨ SPR

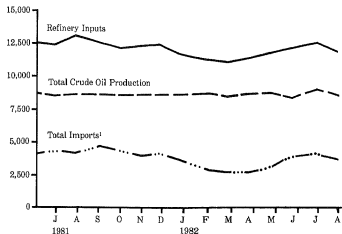
■ Other Primary



Source table: "Crude Oil Supply and Disposition."



## Crude Oil Supply and Disposition, Monthly (Thousand Barrels per Day)



¹Includes SPR imports.

Source table: "Crude Oil Supply and Disposition."

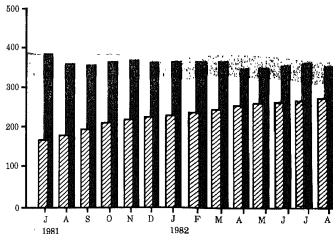
## Crude Oil Ending Stocks, Monthly (Millions of Barrels)

Legend

SPR

Other Primary

Average Stock Range¹



¹Average stock range (excluding SPR) based on 3 years of data. See Explanatory Note 2.5.

Source table: "Crude Oil Supply and Disposition."

# Finished Motor Gasoline Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>1</sup>		
		Total Production	Imports <sup>2</sup>	Stock Withdrawals <sup>2,3</sup>	Exports	Product Supplied			Total Motor Gasoline <sup>4</sup>	Finished Motor Gasoline
						Total	Unleaded <sup>5</sup>	Unleaded		
Thousand Barrels per Day							Percent of Total	Millions of Barrels		
1973	AVERAGE	6,535	184	9	4	6,674	NA	NA	209	
1974	AVERAGE	6,369	204	-24	2	6,537	NA	NA	218	
1975	AVERAGE	6,529	184	-28	2	6,675	NA	NA	235	
1976	AVERAGE	6,841	181	10	3	6,978	NA	NA	231	
1977	AVERAGE	7,033	217	-72	2	7,177	1,978	27.6	258	
1978	AVERAGE	7,189	190	54	1	7,412	2,521	34.0	238	
1979	AVERAGE	6,852	181	2	(*)	7,034	2,798	39.8	237	
1980	January	6,891	141	-809	1	6,323	2,718	43.0	262	
	February	6,866	154	-423	(*)	6,596	2,960	45.0	275	
	March	6,616	155	-267	(*)	6,406	3,032	47.3	283	
	April	6,284	155	362	1	6,800	3,021	44.4	272	
	May	6,316	132	283	1	6,725	2,980	44.3	263	
	June	6,589	148	-69	1	6,657	3,089	46.6	265	
	July	6,405	149	-132	3	6,743	3,131	46.4	261	
	August	6,452	141	56	1	6,546	3,135	47.2	259	
	September	6,383	106	28	7	6,510	3,054	46.9	256	
	October	6,131	152	380	1	6,662	3,110	46.7	247	
	November	6,467	126	-359	(*)	6,234	3,123	50.1	257	
	December	6,644	121	-133	1	6,632	3,421	51.6	261	
	AVERAGE	6,506	140	-66	1	6,578	3,087	46.6		
1981	January	6,715	138	-421	(*)	6,431	3,141	48.6	276	227
	February	6,306	111	-118	1	6,301	3,086	49.1	284	230
	March	6,213	171	-81	(*)	6,303	3,087	49.1	285	232
	April	6,114	186	303	(*)	6,802	3,284	49.7	272	223
	May	6,122	150	344	1	6,615	3,115	47.1	259	213
	June	6,220	186	622	1	7,028	3,419	48.6	242	194
	July	6,405	151	268	(*)	6,823	3,424	50.2	228	188
	August	6,811	124	-95	3	6,837	3,344	50.4	233	186
	September	6,564	169	-70	2	6,662	3,338	50.1	237	191
	October	6,428	147	7	3	6,578	3,257	49.5	236	190
	November	6,564	148	-338	1	6,373	3,198	50.2	248	201
	December	6,586	197	-91	11	6,681	3,444	51.5	253	203
	AVERAGE	6,405	157	28	2	6,588	3,264	49.6		
1982	January	6,181	114	-564	18	5,920	3,033	51.2	282	214
	February	5,917	133	28	8	6,070	3,145	51.8	262	213
	March	6,004	183	469	44	6,612	3,396	51.4	248	196
	April	6,104	177	641	33	6,880	3,464	50.7	223	180
	May	6,322	163	188	23	6,550	3,415	51.3	215	174
	June	6,787	195	-138	14	6,812	3,561	52.3	220	178
	July*	R 6,788	200	-165	24	R 6,798	3,574	52.6	226	183
	August**	6,337	NA	NA	NA	6,709	NA	NA	224	NA
	AVERAGE	6,305	NA	NA	NA	6,581	NA	NA		

<sup>1</sup> Ending stocks for 1973-1979 are totals as of December 31.

<sup>2</sup> Beginning in 1981 excludes blending components.

<sup>3</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup> Includes motor gasoline blending components.

<sup>5</sup> Includes gasoline.

Totals may not equal sum of components due to independent rounding.

(\*) = Less than 500 barrels. NA = Not available. R = Revised data.

\*\* See Explanatory Note 5.3.

\*\* Preliminary statistics. See Explanatory Note 2.7.

Notes: Beginning in January 1981, the Energy Information Administration modified survey forms, definitions, and processing procedures. See Explanatory Note 4 on Changes for the effects on motor gasoline statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Distillate Fuel Oil Supply and Disposition

		Supply				Disposition		Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly	Exports	Product Supplied	
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	2,022	392	-115	2	9	3,092	166
1974	AVERAGE	2,089	289	-6	2	2	2,948	200
1975	AVERAGE	2,854	155	40	2	1	2,951	209
1976	AVERAGE	2,924	146	82	1	1	3,133	196
1977	AVERAGE	3,278	250	-176	1	1	3,352	250
1978	AVERAGE	3,167	173	93	1	3	3,432	216
1979	AVERAGE	3,153	193	-24	1	3	3,311	229
1980	January	3,014	179	526	1	7	3,714	212
	February	2,786	237	716	1	6	3,712	192
	March	2,558	193	445	1	19	3,179	178
	April	2,461	154	21	2	2	2,635	177
	May	2,474	126	-199	1	1	2,402	183
	June	2,647	108	-439	1	(*)	2,317	197
	July	2,680	117	-557	2	3	2,249	214
	August	2,482	77	-403	2	(*)	2,137	226
	September	2,686	101	-201	2	(*)	2,687	232
	October	2,590	115	215	1	(*)	2,920	226
	November	2,703	133	111	1	(*)	2,949	222
	December	2,891	168	556	1	(*)	3,615	205
	AVERAGE	2,882	142	84	1	3	2,888	
1981	January	2,989	273	636	11	(*)	4,108	179
	February	2,809	325	246	11	17	3,373	173
	March	2,484	147	264	9	(*)	2,804	184
	April	2,418	118	-9	10	3	2,532	185
	May	2,454	179	-232	10	(*)	2,411	172
	June	2,501	225	-270	9	(*)	2,464	180
	July	2,395	179	-204	10	2	2,378	186
	August	2,656	174	-450	8	(*)	2,386	200
	September	2,610	129	-235	10	1	2,513	207
	October	2,485	119	197	9	5	2,803	201
	November	2,716	124	36	11	8	2,880	200
	December	2,886	95	277	11	26	3,212	182
	AVERAGE	2,613	173	38	10	6	2,825	
1982	January	2,815	96	780	10	90	3,410	188
	February	2,447	130	869	11	90	3,187	147
	March	2,294	48	612	10	84	2,881	126
	April	2,357	59	631	13	84	2,956	109
	May	2,616	74	-184	10	75	2,444	114
	June	2,731	100	-335	10	56	2,450	125
	July*	R 2,734	R 124	R -781	11	24	R 2,894	R 148
	August**	2,537	65	-447	NA	NA	2,142	156
	AVERAGE	2,543	87	115	NA	NA	2,863	

<sup>1</sup> Ending stocks for 1973 - 1979 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

Totals may not equal sum of components due to independent rounding.

(\*) = Less than 500 barrels per day. NA = Not available. R = Revised data.

\* See Explanatory Note 5.4.

\*\* Preliminary Statistics. See Explanatory Note 2.7.

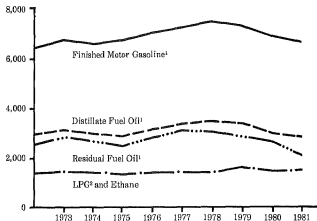
Note: Beginning in January 1981, the Energy Information Administration modified survey forms, definitions, and processing procedures. See Explanatory Note 4 on Changes for the effects on Distillate Fuel Oil statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

## Products Supplied, Annual (Thousand Barrels per Day)



<sup>1</sup>Figures for 1979 and 1980 recast to account for data system changes in 1981. See Explanatory Note 4.

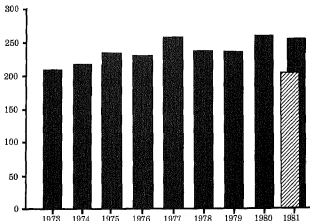
<sup>2</sup>Liquefied Petroleum Gases.

Source tables: "Finished Motor Gasoline Supply and Disposition," "Distillate Fuel Oil Supply and Disposition," "Residual Fuel Oil Supply and Disposition," "Liquefied Petroleum Gases and Ethane Supply and Disposition."

## Motor Gasoline<sup>1</sup> Ending Stocks, Annual (Millions of Barrels)

### Legend

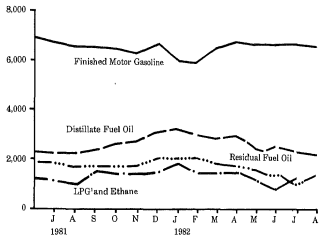
■ Total  
▨ Finished



<sup>1</sup>Includes finished motor gasoline blending components.

Source table: "Finished Motor Gasoline Supply and Disposition."

# **Products Supplied, Monthly** (Thousand Barrels per Day)



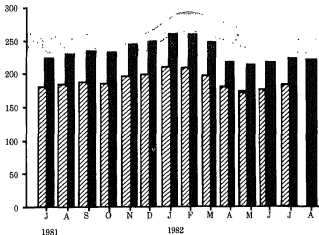
<sup>1</sup>Liquefied Petroleum Gases.

Source tables: "Finished Motor Gasoline Supply and Disposition," "Distillate Fuel Oil Supply and Disposition," "Residual Fuel Oil Supply and Disposition," "Liquefied Petroleum Gases and Ethane Supply and Disposition."

# **Motor Gasoline Ending Stocks, Monthly** (Millions of Barrels)

## **Legend**

- Total Motor Gasoline<sup>1</sup>
- Finished Motor Gasoline
- Average Stock Range<sup>2</sup>

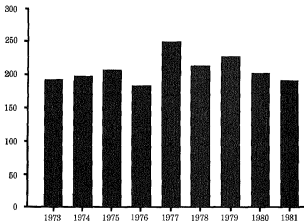


<sup>1</sup>Includes finished motor gasoline blending components.

<sup>2</sup>Average stock range for total motor gasoline based on 3 years of data. See Explanatory Note 2.5.

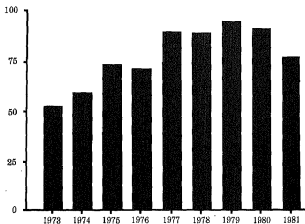
Source table: "Finished Motor Gasoline Supply and Disposition."

# **Distillate Fuel Oil Ending Stocks, Annual** (Millions of Barrels)



Source table: "Distillate Fuel Oil Supply and Disposition."

# **Residual Fuel Oil Ending Stocks, Annual** (Millions of Barrels)



Source table: "Residual Fuel Oil Supply and Disposition."

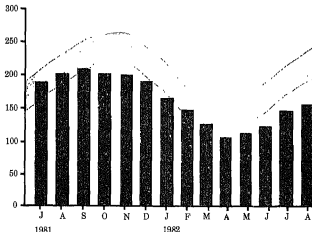
# **Distillate Fuel Oil Ending Stocks, Monthly** (Millions of Barrels)

## **Legend**

 Average Stock Range<sup>1</sup>

<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.6.

Source table: "Distillate Fuel Oil Supply and Disposition."



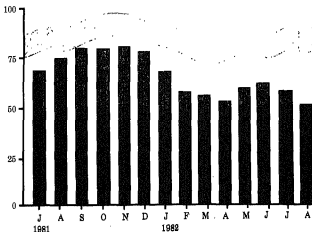
# **Residual Fuel Oil Ending Stocks, Monthly** (Millions of Barrels)

## **Legend**

 Average Stock Range<sup>1</sup>

<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.6.

Source table: "Residual Fuel Oil Supply and Disposition."



# Residual Fuel Oil Supply and Disposition

		Supply				Disposition		Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly	Exports	Products Supplied	
Thousand Barrels per Day								Millions of Barrels
1973	AVERAGE	871	1,853	5	17	23	2,822	53
1974	AVERAGE	1,070	1,587	-17	13	14	2,839	80
1976	AVERAGE	1,235	1,223	2	15	15	2,482	74
1978	AVERAGE	1,377	1,413	5	17	12	2,901	72
1977	AVERAGE	1,784	1,359	-45	13	8	3,071	90
1976	AVERAGE	1,867	1,365	-1	13	13	3,023	90
1979	AVERAGE	1,687	1,151	-15	12	9	2,828	98
1980	January	1,771	1,336	-51	14	5	3,067	97
	February	1,773	1,122	214	14	17	3,105	91
	March	1,684	978	87	14	2	2,658	86
	April	1,696	775	102	13	40	2,444	85
	May	1,608	812	-78	12	20	2,235	88
	June	1,576	746	-4	14	14	2,321	88
	July	1,480	787	71	13	80	2,291	86
	August	1,444	875	-43	13	2	2,288	87
	September	1,495	906	-31	10	21	2,359	88
	October	1,512	875	-100	9	70	2,227	91
	November	1,579	1,024	-74	10	96	2,451	93
	December	1,660	1,025	46	10	82	2,579	92
	AVERAGE	1,680	939	10	12	33	2,598	
1981	January	1,612	1,015	302	32	86	2,696	82
	February	1,585	954	150	44	125	2,598	78
	March	1,424	898	100	48	145	2,126	75
	April	1,320	584	66	49	151	1,968	73
	May	1,223	741	-170	49	25	1,817	76
	June	1,232	540	291	49	76	2,037	69
	July	1,174	630	2	48	82	1,671	69
	August	1,231	619	-179	50	89	1,652	75
	September	1,292	841	-176	61	126	1,882	80
	October	1,238	786	8	54	202	1,854	80
	November	1,227	880	-48	53	203	1,909	81
	December	1,329	916	110	52	157	2,250	78
	AVERAGE	1,321	- 890	37	48	118	2,085	
1982	January	1,183	821	328	53	235	2,150	65
	February	1,136	926	358	53	213	2,261	58
	March	1,121	910	26	53	197	1,912	57
	April	1,182	762	124	52	234	1,867	54
	May	1,127	738	-175	52	191	1,551	59
	June	1,077	643	-49	50	217	1,504	81
	July*	R 1,029	R 578	R 81	49	239	R 1,486	R 59
	August**	950	563	177	NA	NA	1,522	57
	AVERAGE	1,104	738	102	NA	NA	1,774	

<sup>1</sup> Ending Stocks for 1973-1979 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

\* See Explanatory Note 5.4.

\*\* Preliminary Statistics. See Explanatory Note 2.7.

Notes: Beginning in January 1981, the Energy Information Administration modified survey forms, definitions, and processing procedures.

See Explanatory Note 4 on changes for the effects on residual fuel oil statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic Coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.



# Liquefied Petroleum Gases and Ethane Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Refinery Inputs	Exports	Product Supplied	
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	1,600	132	-35	220	27	1,448	96
1974	AVERAGE	1,565	123	-38	223	25	1,408	113
1975	AVERAGE	1,527	112	-35	248	28	1,333	125
1976	AVERAGE	1,535	130	24	280	25	1,404	118
1977	AVERAGE	1,566	161	-55	233	18	1,422	136
1978	AVERAGE	1,537	123	12	239	20	1,413	132
1979	AVERAGE	1,556	217	70	256	15	1,582	111
1980	January	1,580	254	481	261	30	1,663	96
	February	1,581	252	209	252	26	1,754	90
	March	1,519	214	7	211	23	1,606	90
	April	1,546	186	-339	171	19	1,293	100
	May	1,538	181	-224	182	17	1,285	107
	June	1,528	184	-319	170	16	1,235	117
	July	1,485	172	-283	209	16	1,147	125
	August	1,507	158	-296	202	17	1,148	135
	September	1,495	213	-80	226	19	1,382	137
	October	1,545	249	86	259	24	1,697	134
	November	1,549	231	82	304	23	1,635	132
	December	1,667	269	373	315	29	1,666	120
	AVERAGE	1,535	216	-27	233	21	1,498	
1981	January	1,517	305	363	362	21	1,613	117
	February	1,693	327	173	303	21	1,759	112
	March	1,551	260	-4	257	20	1,530	112
	April	1,536	214	-236	231	26	1,308	116
	May	1,567	189	-256	220	10	1,279	127
	June	1,567	208	-208	237	24	1,304	129
	July	1,507	213	-258	216	17	1,229	141
	August	1,592	195	-242	235	149	1,180	146
	September	1,622	199	-75	287	21	1,438	151
	October	1,593	287	72	320	78	1,556	149
	November	1,571	280	89	363	58	1,495	145
	December	1,488	255	379	428	50	1,624	135
	AVERAGE	1,571	244	-18	289	42	1,468	
1982	January	1,546	314	480	346	87	1,673	122
	February	1,476	291	310	327	51	1,659	114
	March	1,523	223	145	280	74	1,528	109
	April	1,568	155	107	257	77	1,527	108
	May	1,563	185	-61	235	43	1,431	106
	June	1,571	162	-109	282	106	1,288	111
	July*	1,556	227	-5	253	37	1,467	111
	AVERAGE	1,547	231	122	285	65	1,546	

<sup>1</sup> Ending stocks for 1973 - 1979 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

Totals may not equal sum of components due to independent rounding.

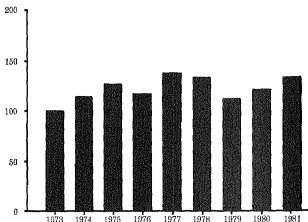
\* See Explanatory Note 5.5.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

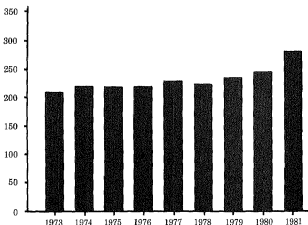
Sources: See "Sources" at the end of this section.

**Liquefied Petroleum Gases and Ethane Ending Stocks, Annual**  
(Millions of Barrels)



Source table: "Liquefied Petroleum Gases and Ethane Supply and Disposition."

**Other Petroleum Products<sup>1</sup> Ending Stocks, Annual**  
(Millions of Barrels)



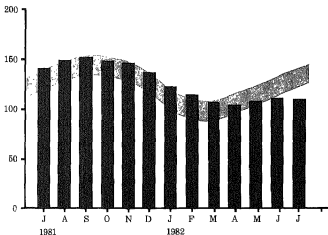
<sup>1</sup>Includes natural gasoline and isopentane, unfinished oils, gasoline blending components, jet fuels, kerosene, lubricants, and asphalt. Some gasoline blending components not included prior to 1981.

Source table: "Other Petroleum Products Supply and Disposition."

## Liquefied Petroleum Gases and Ethane Ending Stocks, Monthly (Millions of Barrels)

Legend

 Average Stock Range<sup>1</sup>



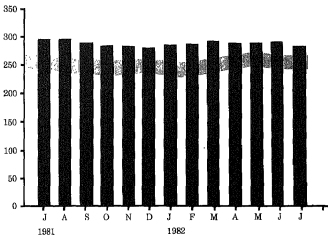
<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.5.

Source table: "Liquefied Petroleum Gases and Ethane Supply and Disposition."

## Other Petroleum Products<sup>1</sup> Endings Stocks, Monthly (Millions of Barrels)

Legend

 Average Stock Range<sup>2</sup>



<sup>1</sup>Includes natural gasoline and isopentane, unfinished oils, gasoline blending components, jet fuels, kerosene, lubricants, and asphalt.

<sup>2</sup>Average stock range based on 3 years of data. See Explanatory Note 2.5.

Source table: "Other Petroleum Products Supply and Disposition."

# Other Petroleum Products<sup>1</sup> Supply and Disposition

	Supply			Disposition			Ending Stocks <sup>2</sup>
	Total Production	Imports	Stock Withdrawal <sup>3</sup>	Refinery Inputs	Exports	Products Supplied	
	Thousand Barrels per Day						Millions of Barrels
1973 AVERAGE	3,693	502	-9	790	168	3,270	208
1974 AVERAGE	3,588	432	-28	885	174	3,123	218
1975 AVERAGE	3,424	277	-2	537	180	3,002	219
1976 AVERAGE	3,643	208	-5	524	175	3,145	220
1977 AVERAGE	3,912	205	-27	514	155	3,410	230
1978 AVERAGE	4,046	188	14	492	167	3,589	225
1979 AVERAGE	4,153	195	-37	362	209	3,749	238
1980 January	4,157	269	135	581	186	3,786	234
February	4,181	167	-153	380	174	3,541	239
March	4,126	210	-370	140	200	3,927	250
April	4,105	236	-374	89	180	3,703	281
May	4,018	222	-301	155	227	3,577	271
June	4,016	225	-49	250	256	3,987	272
July	3,873	186	82	358	206	3,578	270
August	3,753	138	212	351	221	3,532	283
September	3,952	206	25	234	188	3,761	282
October	3,737	220	176	351	163	3,588	267
November	3,786	213	158	475	148	3,533	252
December	3,762	206	151	382	194	3,596	247
AVERAGE	3,956	210	-23	311	196	3,834	
1981 January	3,821	182	50	551	132	3,061	286
February	3,720	182	-230	538	206	2,958	302
March	3,722	230	-56	842	210	3,043	304
April	3,711	230	24	733	192	3,040	303
May	3,882	229	-58	594	236	3,231	305
June	3,825	218	-29	658	197	3,281	306
July	3,862	149	254	701	212	3,282	287
August	3,876	276	-35	676	219	3,225	288
September	3,718	265	215	683	178	3,159	281
October	3,503	241	183	710	227	3,000	285
November	3,579	262	33	784	154	2,905	284
December	3,543	243	71	805	223	2,829	282
AVERAGE	3,739	226	46	723	199	3,046	
1982 January	3,181	240	-102	602	180	2,536	284
February	3,354	280	-118	646	136	2,724	287
March	3,466	241	-204	734	181	2,827	294
April	3,384	257	91	601	204	2,767	291
May	3,206	309	196	823	210	2,786	286
June	3,481	315	115	815	216	2,879	281
July*	3,578	381	18	852	187	2,835	281
AVERAGE	3,397	292	0	758	186	2,748	

<sup>1</sup> Includes natural gasoline and isopentane, unfractionated stream, plant condensate, other fluids; and all finished petroleum products except finished motor gasoline, distillate fuel oil, and residual fuel oil.

<sup>2</sup> Ending Stocks for 1973-1979 are totals as of December 31.

<sup>3</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

Totals may not equal sum of components due to independent rounding.

\* See Explanatory Note 5.6.

Note: Annual stock change for 1975 and 1981 were calculated using expanded survey coverage. Geographic Coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Crude Oil and Petroleum Product Imports from OPEC Sources

	Algeria	Libya	Saudi Arabia	United Arab Emirates	Indonesia	Iran	Nigeria	Venezuela	Other OPEC <sup>1</sup>	Total OPEC	Total Arab OPEC <sup>2</sup>
Thousand Barrels per Day											
<b>1973</b>											
<b>AVERAGE</b>	138	164	488	71	213	223	459	1,136	108	2,890	915
<b>1974</b>											
<b>AVERAGE</b>	190	4	461	74	300	409	713	579	88	3,280	752
<b>1975</b>											
<b>AVERAGE</b>	282	232	715	117	380	280	782	702	122	3,801	1,383
<b>1976</b>											
<b>AVERAGE</b>	432	453	1,293	254	539	298	1,026	700	134	5,086	2,424
<b>1977</b>											
<b>AVERAGE</b>	559	723	1,380	335	541	535	1,143	580	287	5,183	3,195
<b>1978</b>											
<b>AVERAGE</b>	848	854	1,144	385	573	565	918	545	228	5,751	2,983
<b>1979</b>											
<b>AVERAGE</b>	838	858	1,358	281	420	304	1,080	580	212	5,837	3,058
<b>1980</b>											
January	503	818	1,876	202	454	95	1,054	789	179	5,487	3,034
February	859	803	1,412	304	317	8	1,036	643	152	5,031	3,058
March	472	864	1,380	258	405	0	824	352	175	4,952	2,889
April	548	893	1,300	150	374	0	734	343	240	4,088	2,482
May	441	488	1,148	172	380	0	855	405	147	4,099	2,328
June	487	591	1,325	178	331	0	988	409	106	4,408	2,588
July	557	492	1,192	158	355	0	752	417	82	3,995	2,418
August	432	431	1,139	142	289	0	792	408	112	3,743	2,222
September	375	505	1,112	107	288	0	796	425	111	3,570	2,185
October	485	478	1,044	182	348	0	725	482	95	3,821	2,228
November	490	500	1,201	106	348	0	624	596	78	3,844	2,338
December	423	558	1,301	83	288	0	958	510	101	4,423	2,484
<b>AVERAGE</b>	488	554	1,281	172	348	9	857	481	130	4,300	2,551
<b>1981</b>											
January	341	500	1,284	83	424	0	908	549	27	4,127	2,219
February	381	488	1,122	93	406	0	886	463	92	3,891	2,064
March	352	485	1,027	47	328	0	771	360	54	3,425	1,812
April	283	485	1,034	88	307	0	812	237	39	3,245	1,887
May	393	443	933	17	297	0	664	331	124	3,203	1,796
June	356	380	865	80	357	0	528	248	118	2,922	1,703
July	333	251	1,079	80	340	0	851	466	35	3,233	1,757
August	348	274	1,082	61	377	0	321	523	84	3,070	1,795
September	336	154	1,477	95	371	0	323	369	149	3,264	2,063
October	242	147	1,342	90	427	0	412	389	172	3,220	1,820
November	210	132	1,270	112	353	0	517	535	56	3,184	1,724
December	176	122	1,045	158	400	0	884	411	132	3,129	1,502
<b>AVERAGE</b>	311	319	1,129	81	388	0	620	408	90	3,323	1,848
<b>1982</b>											
January	254	181	877	87	273	0	682	376	128	2,816	1,378
February	139	92	692	79	238	0	579	347	102	2,267	1,044
March	91	37	555	155	200	0	503	399	91	2,032	850
April	85	0	479	122	215	0	427	411	79	1,818	707
May	179	0	801	116	236	0	211	414	54	1,811	897
June	93	0	599	94	215	72	537	381	110	2,075	799
July	122	0	844	123	327	58	910	349	95	2,540	827
<b>AVERAGE</b>	138	41	835	111	244	20	547	380	94	2,210	845

<sup>1</sup> Includes Ecuador, Gabon, Iraq, Kuwait, and Qatar.

<sup>2</sup> Includes Algeria, Libya, Saudi Arabia, United Arab Emirates, Iraq, Kuwait, and Qatar.

Totals may not equal sum of components due to independent rounding.

Note: Beginning in October 1977, Strategic Petroleum Reserve imports are included.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Crude Oil and Petroleum Product Imports from Non-OPEC Sources

	Bahamas	Canada	Mexico	Netherlands Antilles	Trinidad and Tobago	United Kingdom	Puerto Rico <sup>1</sup>	Virgin Islands <sup>1</sup>	Other <sup>2</sup>	Total
Thousand Barrels per Day										
<b>1973</b>										
<b>AVERAGE</b>	174	1,325	19	585	255	15	99	329	495	3,263
<b>1974</b>										
<b>AVERAGE</b>	164	1,070	8	511	251	8	90	391	340	2,532
<b>1975</b>										
<b>AVERAGE</b>	152	848	71	332	242	14	90	408	300	2,454
<b>1976</b>										
<b>AVERAGE</b>	118	599	87	275	274	31	88	422	353	2,247
<b>1977</b>										
<b>AVERAGE</b>	171	517	179	211	280	129	105	498	650	2,914
<b>1978</b>										
<b>AVERAGE</b>	160	497	318	229	253	189	84	428	484	2,513
<b>1979</b>										
<b>AVERAGE</b>	147	539	439	231	180	202	82	431	548	2,819
<b>1980</b>										
January	175	570	545	289	239	295	57	487	492	3,131
February	111	540	477	205	192	105	95	538	952	2,914
March	124	450	460	184	189	232	101	449	801	2,800
April	56	459	545	231	143	192	79	425	819	2,737
May	77	419	575	176	221	124	88	303	498	2,491
June	77	409	527	107	182	148	91	314	485	2,486
July	43	370	450	242	180	115	90	378	375	2,282
August	62	319	848	255	159	195	85	294	493	2,449
September	88	458	550	213	205	218	52	343	473	2,599
October	70	475	605	230	114	134	107	372	450	2,557
November	22	470	459	254	158	157	108	391	435	2,484
December	84	502	445	212	149	195	105	423	378	2,471
<b>AVERAGE</b>	78	455	539	225	176	179	85	388	491	2,550
<b>1981</b>										
January	39	549	491	198	190	233	89	484	552	2,701
February	54	545	437	227	183	271	48	481	828	2,851
March	74	472	488	227	89	263	45	370	571	2,693
April	69	412	418	188	139	402	40	385	380	2,423
May	122	365	522	219	108	380	59	344	474	2,575
June	51	353	538	198	124	397	87	262	525	2,513
July	77	382	384	212	179	553	50	209	541	2,583
August	89	378	489	255	123	582	58	184	539	2,898
September	111	429	708	163	189	525	72	285	881	3,100
October	83	449	899	161	121	351	60	303	582	2,739
November	63	547	628	168	168	253	76	294	421	2,557
December	70	501	587	148	125	280	73	387	593	2,714
<b>AVERAGE</b>	74	447	522	197	133	375	52	327	534	2,972
<b>1982</b>										
January	28	508	425	179	106	346	62	334	425	2,415
February	80	533	489	221	120	132	38	354	487	2,424
March	43	436	503	189	118	293	62	307	479	2,429
April	67	357	487	180	166	247	38	288	552	2,408
May	79	418	787	152	85	516	47	302	803	2,974
June	32	452	797	141	129	539	58	322	873	3,153
July	30	527	793	158	111	493	38	399	874	3,122
<b>AVERAGE</b>	46	482	605	174	120	351	49	322	575	2,715

<sup>1</sup> U.S. Possessions.

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# Sources

- 1973 through 1976: Bureau of Mines, U.S. Department of the Interior, "Petroleum Statement, Annual" and PAD Districts Supply/Demand, Annual," Mineral Industry Surveys.
- 1977 through 1980: Energy Information Administration, U.S. Department of Energy, "Monthly Petroleum Statistics Report," (unleaded gasoline category).
- 1977 through 1980: Energy Information Administration, U.S. Department of Energy, "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual," "Energy Data Reports.
- January 1981 through December 1981: Energy Information Administration, U.S. Department of Energy, "Petroleum Supply Annual."
- January 1982 through July 1982: Detailed statistics in this issue. (See Explanatory Notes 5.1 through 5.6).
- August 1982: Estimates based on EIA weekly data (except domestic crude oil production). See Explanatory Note 2.2).
- January 1982 through August 1982: Domestic crude oil production estimate based on historical statistics from State Conservation Agencies and the U.S. Geological Survey. (See Explanatory Note 2.7).





## Detailed Statistics

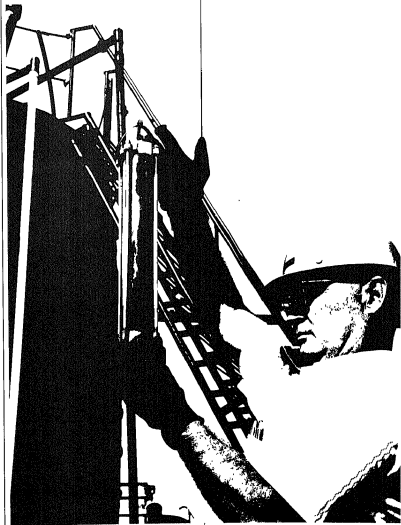




Table 1. U.S. Petroleum Balance, July 1982

	Current Month		Year-to-Date	
	Thousand Barrels	Thousand Barrels per Day	Thousand Barrels	Thousand Barrels per Day
<b>Crude Oil (Including Lease Condensate)</b>				
<b>Field Production</b>				
(1) Alaska	E 63,165	1,716	E 301,347	1,704
(2) Lower 48 States	E 214,852	6,334	E 1,473,793	8,962
(3) Total U.S.	E 288,017	8,046	E 1,835,130	8,858
<b>Net Imports</b>				
(4) Imports (Gross Excluding SPR)	126,572	4,147	662,715	3,280
(5) SPR Imports	3,014	87	33,637	199
(6) Exports	7,405	229	46,123	232
(7) Imports (Net Including SPR)	126,481	4,015	607,226	3,147
<b>Other Sources</b>				
(8) SPR Withdrawal (+) or Addition (-)	-3,013	-87	-38,813	-174
(9) Other Stock Withdrawal (+) or Addition (-)	-1,803	-55	18,898	96
(10) Used Directly and Lost	-1,054	-83	-14,005	-85
(11) Unaccounted for 1	33	1	23,193	126
(12) Total Other Sources	-5,747	-216	-8,737	-41
(13) Crude Input to Refineries	385,853	12,447	2,493,623	11,782
(13) = (3) + (7) + (12)				
<b>Natural Gas Plant Liquids (NGPL)</b>				
(14) Field Production	47,158	1,621	326,398	1,840
(15) Imports 2	1,542	50	3,701	17
(16) Stock Withdrawal (+) or Addition (-) 3	-825	-27	678	3
(17) Total NGPL Supply	47,880	1,544	330,775	1,860
<b>Other Liquids</b>				
<b>Unfinished Oil and Gasoline Blending Components, Total</b>				
(18) Stock Withdrawal (+) or Addition (-)	-1,396	-45	245	1
(19) Imports	5,310	171	31,557	148
(20) Other Hydrocarbons and Alcohol New Supply (Field Production) 4	1,799	58	10,492	48
(21) Refinery Processing Gain 1	16,860	544	106,651	519
(22) Crude Used Directly	1,853	60	13,247	62
(23) Total Other Liquids	24,433	763	164,282	779
(23) = (18) through (22)				
(24) Total Production of Products 5	456,155	14,779	2,808,660	14,967
(24) = (13) + (17) + (23)				
<b>Net Imports of Refined Products 6</b>				
(25) Imports (Gross)	40,208	1,297	292,482	1,380
(26) Exports	15,857	512	119,598	581
(27) Imports (Net)	24,349	785	173,524	819
(28) Total New Supply of Products	682,406	15,584	3,162,184	14,018
(28) = (24) + (27)				
(29) Refined Products Stock Withdrawal (+) or Addition (-) 3	-24,587	-783	108,735	503
(30) Total Petroleum Products Supplied for Domestic Use	457,901	14,771	3,260,919	15,416
(30) = (28) + (29)				
<b>Finished Motor Gasoline</b>				
(31) Finished Motor Gasoline	216,769	6,799	1,389,846	6,542
(32) Naphtene-Type Jet Fuel	6,850	221	44,205	206
(33) Kerosene-Type Jet Fuel	23,721	785	150,876	707
(34) Kerosene	2,953	85	20,669	127
(35) Distillate Fuel Oil	84,510	2,004	509,406	2,750
(36) Residual Fuel Oil	45,437	1,458	313,507	1,800
(37) Lighter Petroleum Gases and Ethane	46,111	1,457	326,484	1,535
(38) Other	70,915	2,288	415,703	1,981
(39) Total Reclassified 1	-13,458	-434	-72,185	-349
(40) Total Product Supplied	467,901	14,771	3,260,920	15,419
(40) = (31) through (38)				
<b>Ending Stocks, All Cals</b>				
(41) Crude Oil and Lease Condensate (Excluding SPR)	344,566	—	344,566	—
(42) Strategic Petroleum Reserve (SPR)	287,154	—	287,154	—
(43) Unfinished Oil	117,780	—	117,780	—
(44) Gasoline Blending Components	43,744	—	43,744	—
(45) Natural Gasoline and Unfractionated Stream	14,843	—	14,843	—
(46) Finished Refined Products 8	505,810	—	505,810	—
(47) Total Stocks	1,363,907	—	1,363,607	—

1 A balancing item.

2 Includes isopentane, natural gasoline, unfractionated streams, and plant condensate only.

3 For products included see Explanatory Note 4.7.

4 Estimated.

5 Not Applicable.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes 1, 2, and 5.7.

Table 2. Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply		Unaccounted For Crude Oil	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Disposition	Products Supplied	Ending Stocks
				Stock Withdrawal (+) or Addition (-)	Imports						
<b>Crude Oil (including lease condensate)</b>	<b>262,117</b>	<b>0</b>	<b>131,546</b>	<b>-4,916</b>	<b>35</b>	<b>-1,964</b>	<b>385,833</b>	<b>7,105</b>	<b>0</b>	<b>611,720</b>	
Natural Gas Plant Liquids and LIGs	46,748	8,396	8,584	-888	0	0	15,293	1,154	47,987	152,642	
Natural Gasoline and Naphtene	5,015	0	1,315	374	0	0	6,390	554	5,741	5,741	
Unfractionated Steam	1,223	0	1,215	-1,213	0	0	0	0	2	1,556	
Plant Condensate	974	0	227	110	0	0	1,328	0	2	111,058	
Liquid Petroleum Gases and Ethane	38,528	9,296	7,042	-159	0	0	7,841	1,154	46,111	6,287	
Ethane	7,651	121	1,721	455	0	0	108	0	10	10,140	
Propane	13,724	8,364	1,324	-325	0	0	183	541	22,253	63,527	
Butane	6,559	773	1,491	-656	0	0	4,658	512	3,477	22,272	
Burner-Propane Mixtures	134	57	708	12	0	0	501	0	810	1,052	
Gasoline	5,820	0	1,856	811	0	0	1,184	0	9,469	1,184	
Isobutane	3,828	-19	0	-336	0	0	2,891	0	-16	1,767	
<b>Other Liquids</b>	<b>1,799</b>	<b>0</b>	<b>5,310</b>	<b>-1,399</b>	<b>0</b>	<b>0</b>	<b>19,169</b>	<b>0</b>	<b>-13,456</b>	<b>161,534</b>	
Other Hydrocarbons and Alcohol	1,799	0	5,310	-1,399	0	0	1,796	0	0	231	
Unrefined Oil	0	0	4,155	-277	0	0	14,112	0	-10,234	47,780	
Motor Gasoline Blending Components	0	0	1,156	-1,160	0	0	3,257	0	-3,301	43,083	
Aviation Gasoline Blending Components	0	0	0	41	0	0	-59	0	140	430	
<b>Finished Petroleum Products</b>	<b>407</b>	<b>427,974</b>	<b>38,937</b>	<b>-34,438</b>	<b>0</b>	<b>1,863</b>	<b>0</b>	<b>14,713</b>	<b>434,350</b>	<b>484,711</b>	
Finished Motor Gasoline	34	27,334	3,252	-4,108	0	0	0	758	273,750	162,643	
Finished Motor Gasoline	34	99,548	3,905	-2,795	0	0	0	0	99,950	93,148	
Finished Unleaded Motor Gasoline	0	110,738	2,300	-2,337	0	0	0	0	110,669	88,781	
Gasoline	0	101	0	-2	0	0	0	0	99	39	
Finished Aviation Gasoline	80	836	0	-6	0	0	0	0	911	2,381	
Jet Fuel	0	6,028	250	-328	0	0	0	0	6,850	6,416	
Naphtene-Type Jet Fuel	0	22,040	225	579	0	0	0	32	23,721	35,415	
Kerosene-Type Jet Fuel	0	2,453	3,301	-149	0	0	0	0	2,823	3,957	
Domestic Fuel Oil	2	6,300	3,301	-33,104	0	355	0	779	145,387	145,387	
Residual Fuel Oil	0	31,497	17,643	1,280	0	3,208	0	7,496	45,439	56,302	
Naphtene < 400 Deg. for Petro. Feed. Use	0	4,579	3,753	204	0	0	0	105	8,231	2,008	
Other Oil > 400 Deg. for Petro. Feed. Use	51	8,511	0	-283	0	0	0	469	7,559	2,076	
Special Naphtene	0	2,023	330	-145	0	0	0	56	2,203	3,006	
Lubricants	0	4,256	330	-102	0	0	0	528	4,256	13,518	
Waxes	0	391	29	54	0	0	0	0	437	758	
Asphalt	0	13,361	0	-388	0	0	0	0	13,361	6,466	
Bitumen	0	13,069	214	3,516	0	0	0	4,477	16,748	22,058	
Slack Oil	0	1,101	0	-21	0	0	0	51	0	54	
Slack Gas	0	19,629	0	0	0	0	0	0	19,629	30	
Miscellaneous Products	225	2,462	2	-527	0	0	0	0	2,111	3,362	
<b>Total</b>	<b>317,972</b>	<b>437,270</b>	<b>178,646</b>	<b>-31,641</b>	<b>35</b>	<b>-101</b>	<b>426,419</b>	<b>22,972</b>	<b>457,901</b>	<b>1,353,907</b>	

1. Unaccounted for crude oil is a balancing item.

2. Total equals refinery fuel use and loss.

(\*) Less than 500 barrels.

Estimated.

Notes: 1. Includes but not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 3. Year-to-Date Supply and Disposition Statistics of Crude Oil and Petroleum Products, January - July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply			Disposition		
				Stock Withdrawn (+) or Added (-) (See 13)	Unaccounted For Crude Oil	Crude Used Directly and Losses <sup>1</sup>	Refinery Inputs	Exports	Products Supplied
<b>Crude Oil (including lease condensate)</b>	<b>2,135,130</b>	<b>0</b>	<b>716,232</b>	<b>-17,315</b>	<b>23,184</b>	<b>-14,065</b>	<b>2,493,623</b>	<b>48,123</b>	<b>0</b>
Natural Gas Plant Liquids and Liquefied Petroleum Gas	322,970	56,763	52,686	34,226	0	0	106,786	13,301	336,062
Natural Gasoline and Isopentane	43,440	0	2,315	1,662	0	0	37,304	7,711	10,332
Unfractionated Stream	1,248	0	-1,024	18	0	0	8	0	216
Liquid Condensate	7,181	0	1,186	23,552	0	0	8,337	0	48
Liquefied Petroleum Gases and Ethane	271,101	58,763	48,996	0	0	0	81,137	13,001	325,464
Propane	11,652	3,255	11,652	0	0	0	1,293	0	69,304
Butane	50,479	52,725	11,521	12,962	0	0	842	6,740	163,125
Isobutane	807	2,391	11,521	4,962	0	0	34,232	7,095	24,182
Ethane-Propane Mixtures	43,892	802	5,095	701	0	0	1,034	0	57,630
Isobutane	23,021	-24	8,189	5,250	0	0	1,034	0	57,630
Other Liquids	10,432	0	31,997	245	0	0	23,867	0	101
Unfractionated and Alcohol	10,432	0	31,997	245	0	0	114,549	0	-72,183
Natural Gasoline Blending Components	0	0	25,000	-8,442	0	0	83,732	0	-45,174
Aviation Gasoline Blending Components	0	0	6,050	6,416	0	0	40,722	0	-87,587
Aviation Gasoline Blending Components	0	0	0	261	0	0	-314	0	576
<b>Finished Petroleum Products</b>	<b>2,400</b>	<b>2,766,846</b>	<b>243,495</b>	<b>83,189</b>	<b>0</b>	<b>13,247</b>	<b>0</b>	<b>105,167</b>	<b>3,005,044</b>
Finished Motor Gasoline	385	1,335,364	35,593	20,524	0	0	0	5,046	1,365,540
Finished Motor Gasoline	396	638,002	21,026	14,940	0	0	0	5,046	676,577
Special Naphtha	20	695,183	13,767	5,964	0	0	0	0	715,523
Special Naphtha	396	4,751	0	32	0	0	0	0	729
Naphtha-Type Jet Fuel	2	42,728	902	526	0	0	0	0	5,300
Kerosene-Type Jet Fuel	2	163,806	5,296	3,926	0	0	0	0	3,281
Kerosene	27	33,259	2,037	1,956	0	0	0	0	44,206
Distillate Fuel Oil	17	539,236	19,013	43,391	0	2,267	0	0	16,979
Residual Fuel Oil	0	257,240	162,486	19,029	0	10,960	0	0	383,537
Naphtha < 400 Deg. for Petrochem. Feedstock	0	33,477	11,566	451	0	0	0	0	44,631
Special Naphtha	0	51,455	3,929	-326	0	0	0	0	53,949
Special Naphtha	50	10,005	789	786	0	0	0	0	14,529
Lubricants	8	3,493	1,190	786	0	0	0	0	25,876
Waxes	0	3,015	1,190	786	0	0	0	0	3,951
Petroleum Coke	0	86,048	0	-1,262	0	0	0	0	5,141
Asphalt	0	62,947	890	-2,461	0	0	0	0	61,200
Road Oil	0	460	2	-48	0	0	0	0	404
Still Gas	0	117,353	0	0	0	0	0	0	117,353
Massellaneous Products	2,003	16,670	90	-903	0	0	0	0	17,917
<b>Total</b>	<b>2,171,961</b>	<b>2,823,699</b>	<b>1,044,222</b>	<b>89,741</b>	<b>23,184</b>	<b>-736</b>	<b>2,714,568</b>	<b>168,081</b>	<b>3,586,020</b>

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Source and estimation procedure: See Explanatory Notes on Data Collection and Estimation.

Table 4. Daily Average Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousand Barrels per Day)

Commodity	Supply				Disposition			
	Field Production	Refinery Production	Imports	Stock Withdrawals (+) Additions (-)	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports	Products Supplied
<b>Crude Oil (including lease condensate)</b>	5,644	0	4,245	-155	-43	12,447	229	0
<b>Natural Gas Plant Liquids and LPGs</b>	1,508	300	277	-32	0	496	37	1,519
Natural Gasoline and Liquefied	181	0	42	0	0	201	0	31
Unfractionated Steam	40	0	0	-30	0	0	0	1
Plant Condensate	31	0	7	4	0	42	0	(9)
<b>Liquid Petroleum Gases and Ethane</b>	1,256	300	277	-5	0	203	37	1,457
Ethane	350	4	68	15	0	3	(4)	327
Propane	443	270	43	-11	0	6	21	716
Butane	221	25	45	-10	0	144	17	112
Butane-Propane Mixtures	221	2	23	(9)	0	3	0	26
Ethane-Propane Mixtures	204	0	61	20	0	0	0	305
Isobutane	107	-1	0	-11	0	96	0	-1
<b>Other Liquids</b>	58	0	171	-45	0	618	0	-434
Other Hydrocarbons and Alcohol	58	0	0	(9)	0	58	0	0
Unfractionated Oils	0	0	134	-9	0	455	0	-350
Motor Gasoline Blending Components	0	0	37	-37	0	108	0	-100
Aviation Gasoline Blending Components	0	0	0	1	0	-3	0	5
<b>Finished Petroleum Products</b>	113	13,006	1,070	-788	0	60	475	13,686
Finished Motor Gasoline	1	6,737	200	-165	0	0	24	6,709
Finished Motor Gasoline	1	3,211	125	-89	0	0	24	3,225
Finished Unfractionated Motor Gasoline	0	3,572	74	-75	0	0	0	3,571
Gasohol	3	3	0	(9)	0	0	0	3
Finished Aviation Gasoline	3	27	(9)	(9)	0	0	0	29
Naphtha-Type Jet Fuel	0	223	8	-11	0	0	0	221
Kerosene-Type Jet Fuel	(9)	740	7	19	0	0	0	765
Kerosene	(9)	86	5	5	0	0	(9)	95
Distillate Fuel Oil	(9)	2,734	124	-761	0	11	24	2,054
Residual Fuel Oil	0	1,039	578	51	0	-49	239	1,456
Other Data for Petro. Prod. Use	0	141	121	7	0	0	3	266
Other Oils > 400 Deg. for Petro. Prod. Use	0	268	0	-9	0	0	16	244
Special Naphtha	2	65	11	-5	0	0	2	71
Lubricants	0	147	11	-3	0	0	17	137
Waxes	0	13	1	2	0	0	1	14
Petroleum Coke	0	431	0	-13	0	0	144	274
Asphalt	0	422	7	113	0	0	2	540
Road Oil	0	2	0	-1	0	0	0	1
SRI Gas	0	612	0	0	0	0	0	612
Miscellaneous Products	8	79	(9)	-17	0	0	2	58
<b>Total</b>	10,228	14,105	5,753	-1,021	1	13,562	741	14,771

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total refinery losses and losses.

(9) Less than 500 barrels per day.

— Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 5. Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January - July 1982  
(Thousand Barrels per Day)

Commodity	Supply					Disposition		
	Field Production	Refinery Production	Imports	Stock Withdrawals (+) Additions (-)	Uncounted For Crude Oil	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports
<b>Crude Oil (including lease condensate)</b>	<b>8,856</b>	<b>0</b>	<b>3,279</b>	<b>-85</b>	<b>109</b>	<b>-68</b>	<b>11,762</b>	<b>232</b>
Natural Gas Plant Liquids and LRGs	1,522	268	249	114	0	0	504	65
Natural Gasoline and Isopentane	205	0	0	0	0	0	0	0
Unrefined Gasoline	6	0	0	-3	0	0	0	0
Unrefined Gasoline	34	0	0	(*)	0	0	(*)	0
Liquefied Petroleum Gases and Ethane	1,270	268	231	111	0	0	388	65
Ethane	270	5	55	-2	0	0	527	(*)
Propane	465	249	58	57	0	0	4	32
Butane	219	11	54	23	0	0	161	33
Butane-Propane Mixtures	4	3	24	3	0	0	5	0
Ethane-Propane Mixtures	207	0	40	25	0	0	(*)	0
Isobutane	109	(*)	0	3	0	0	113	0
<b>Other Liquids</b>	<b>49</b>	<b>0</b>	<b>149</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>540</b>	<b>0</b>
Other Hydrocarbons and Alcohol	49	0	0	(*)	0	0	49	0
Unrefined Oil	0	0	118	-30	0	0	301	0
Motor Gasoline Blending Components	0	0	32	30	0	0	192	0
Aviation Gasoline Blending Components	0	0	0	1	0	0	-1	0
<b>Finished Petroleum Products</b>	<b>16</b>	<b>13,051</b>	<b>5,149</b>	<b>392</b>	<b>0</b>	<b>62</b>	<b>0</b>	<b>496</b>
Finished Motor Gasoline	2	6,300	167	97	0	0	0	24
Finished Motor Gasoline	2	3,013	102	70	0	0	0	24
Finished Unleaded Motor Gasoline	(*)	3,204	65	25	0	0	0	0
Gasoline	0	3	0	(*)	0	0	0	0
Finished Aviation Gasoline	2	22	0	2	0	0	0	0
Aviation Gasoline	0	202	4	3	0	0	0	0
Aviation-Type Jet Fuel	(*)	713	25	0	0	0	0	0
Aviation-Type Jet Fuel	(*)	110	0	0	0	0	0	0
Distillate Fuel Oil	(*)	2,544	90	206	0	11	0	1
Distillate Fuel Oil	0	1,119	767	90	0	52	0	63
Aviation < 400 Deg. for Petro. Feed Use	0	158	55	2	0	0	0	4
Other Oils > 400 Deg. for Petro. Feed Use	0	276	0	-2	0	0	0	20
Special Naphthas	3	92	19	2	0	0	0	0
Waxes	0	146	6	0	0	0	0	17
Waxes	0	14	0	(*)	0	0	0	14
Petroleum Coke	0	406	0	-6	0	0	0	131
Asphalt	0	297	4	-12	0	0	0	1
Flowed Oil	0	2	(*)	0	0	0	0	0
Sill Gas	0	554	0	(*)	0	0	0	0
Microfines Products	10	79	(*)	-3	0	0	0	1
<b>Total</b>	<b>10,245</b>	<b>13,319</b>	<b>4,326</b>	<b>423</b>	<b>109</b>	<b>-4</b>	<b>19,966</b>	<b>793</b>
								<b>15,410</b>

1 Uncounted for crude oil as a balancing item.

2 Total equals refinery fuel use and loss.

(\*) Less than 200 barrels per day.

† Estimated.

Note: Total may not equal sum of components due to independent rounding.

Source: and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 6. PAD District Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply Withdrawn (+) Added (-)	Crude Used Directly for Products and Losses <sup>1</sup>	Net Receipts	Refinery Inputs	Disposition		Ending Stocks
								Exports	Products Supplied	
<b>Crude Oil (including lease condensate)</b>	<b>2,581</b>	<b>0</b>	<b>32,254</b>	<b>1,507</b>	<b>1,103</b>	<b>0</b>	<b>40,010</b>	<b>(4)</b>	<b>0</b>	<b>17,625</b>
Natural Gas Plant Liquids and Liquefied Petroleum Gases	1,096	1,343	495	-652	0	0	182	35	4,464	4,411
Other Products <sup>2</sup>	389	1,343	312	-471	0	2,586	173	35	3,844	4,389
Other Products <sup>3</sup>	129	0	92	19	0	0	0	0	399	0
Other Products <sup>4</sup>	206	0	2,534	-1,191	0	279	2,865	0	-1,037	22,822
Other Hydrocarbons and Alcohol	256	0	1,825	-1,360	0	0	202	0	0	23
Motor Gasoline Blending Components	0	0	703	1,703	0	279	2,002	0	-1,870	17,051
Aviation Gasoline Blending Components	0	0	0	0	0	0	661	0	833	4,946
Other Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0
<b>Finished Petroleum Products</b>	<b>34</b>	<b>43,715</b>	<b>23,064</b>	<b>-8,885</b>	<b>0</b>	<b>75,215</b>	<b>0</b>	<b>732</b>	<b>132,408</b>	<b>168,942</b>
Finished Motor Gasoline	34	20,308	4,068	2,039	0	45,277	0	164	71,562	58,212
Finished Landed Motor Gasoline	34	4,525	2,415	659	0	19,255	0	164	31,355	28,607
Gasoline	0	11,772	1,653	1,381	0	25,422	0	0	40,228	29,241
Fleeted Aviation Gasoline	0	31	(4)	1	0	0	0	0	-1	7
Naphtha-Type Jet Fuel	0	564	250	182	0	365	0	0	197	425
Kerosene-Type Jet Fuel	0	1,412	0	839	0	1,247	0	0	1,278	530
Diesel Fuel Oil	0	22	148	-120	0	6,437	0	0	8,269	7,822
Residual Fuel Oil	0	9,019	3,417	-13,720	0	257	0	1	3,845	3,845
Other Fuel Oil	0	3,639	12,734	1,079	0	17,657	0	105	16,810	57,395
Naphtha and Other Oils for Petrochem.	0	650	991	17	0	3,328	0	1	22,902	27,078
Feedstock	0	24	19	183	0	-119	0	29	1,514	248
Special Naphtha	0	550	233	-25	0	413	0	156	520	911
Lubricants	0	96	0	8	0	0	0	0	1,047	3,352
Petroleum Coke	0	1,335	0	-142	0	0	0	270	325	930
Asphalt	0	3,157	195	259	0	644	0	3	4,222	5,082
Road Oil	0	1,541	0	0	0	0	0	0	0	0
SBI Gas	0	661	1	-116	0	0	0	0	1,941	0
Miscellaneous Products	0	661	1	-116	0	247	0	16	778	622
<b>Total</b>	<b>3,629</b>	<b>45,958</b>	<b>58,233</b>	<b>-9,221</b>	<b>1,103</b>	<b>80,667</b>	<b>43,067</b>	<b>767</b>	<b>135,836</b>	<b>211,821</b>

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes motor gasoline, kerosene, unrefined motor gasoline, and plant condensate.

(4) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.



Table 7. PAD District II Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply Stock Withdrawn or Added (1)	Crude Used Directly and Lost (2)	Net Receipts	Refinery Inputs	Exports	Products Supplied	Ending Stocks
Crude Oil (including lease condensate)	6 29,262	0	22,867	911	-29	1,640	30,990	949	0	74,126
Natural Gas Plant Liquids and Light	8,379	2,410	5,910	1,738	0	2,939	4,995	7	15,914	34,706
Liquid Petroleum Gases	6,441	2,301	3,589	691	0	1,756	2,769	7	12,082	29,726
Ethane	19	19	1,721	362	0	0	0	0	3,703	1,867
Other Products <sup>3</sup>	337	0	695	0	0	1,183	2,156	0	49	3,255
Other Liquids	409	0	630	-545	0	927	2,235	0	-914	31,644
Other Hydrocarbons and Alcohol	409	0	0	7	0	0	416	0	0	105
Motor Gasoline Blending Components	0	0	12	325	0	299	1,788	0	-1,013	22,176
Aviation Gasoline Blending Components	0	0	403	-363	0	66	23	0	-66	1,261
Aviation Gasoline Blending Components	0	0	0	6	0	0	0	0	0	100
Finished Petroleum Products	14	102,442	654	-11,239	0	21,591	0	354	112,789	126,073
Finished Motor Gasoline	0	56,941	62	-5,071	0	14,248	0	(9)	60,179	53,343
Finished Landed Motor Gasoline	0	28,771	59	-3,142	0	7,356	0	(9)	33,044	28,001
Finished Unblended Motor Gasoline	0	28,143	2	-1,925	0	6,892	0	(9)	33,112	24,417
Gasoline	0	27	0	4	0	0	0	0	20	25
Finished Aviation Gasoline	0	184	0	-45	0	174	0	0	1,930	591
Naptha-Type Jet Fuel	0	980	0	31	0	72	0	0	1,133	1,133
Kerosene-Type Jet Fuel	0	3,591	0	407	0	759	0	0	4,756	7,169
Kerosene	0	386	0	-11	0	216	0	0	591	2,019
Distillate Fuel Oil	1	22,072	100	-8,449	0	6,012	0	0	19,865	42,275
Residual Fuel Oil	0	3,399	303	-58	0	-710	0	0	2,934	5,712
Refrigerant and Other Oils for Petro. Prod.	0	1,897	0	0	0	9	0	62	1,834	508
Special Naphtha	0	473	127	-11	0	149	0	1	737	603
Special Naphtha	0	84	49	27	0	251	0	13	1,799	2,118
Waxes	0	10	0	-179	0	0	0	0	0	88
Petroleum Coke	0	3,355	19	2,036	0	277	0	401	2,446	1,319
Asphalt	0	3,590	0	0	0	0	0	45	6,237	6,547
Road Oil	0	28	0	11	0	0	0	0	37	46
Still Gas	0	4,162	0	0	0	0	0	0	4,162	0
Miscellaneous Products	14	205	2	-56	0	65	0	1	226	196
Total	36,065	104,852	29,379	-9,235	-23	27,267	181,088	1,299	127,668	267,145

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes natural gasoline, kerosene, unrefined naphtha, and plant condensate.

(4) Less than 500 barrels.

(5) Not stated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 5. PAD District III Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply Stock Withdrawn (+) or Added (-)	Crude Used Directly and Losses <sup>1</sup>	Net Receipts	Refinery Inputs	Disposition		Ending Stocks
								Exports	Products Supplied	
Crude Oil (including lease condensate)										
Natural Gas Plant Liquids and LFOs	34,238	0	64,302	-6,549	-29,378	12,536	175,086	0	0	428,853
Liquefied Petroleum Gases	22,722	4,060	2,117	-1,989	0	-5,263	9,746	945	23,481	84,943
Ethane	5,346	86	0	50	0	-4,404	3,741	945	17,658	69,223
Other Products <sup>2</sup>	5,570	0	1,315	-1,519	0	-659	108	( <sup>3</sup> )	5,014	3,659
Other Liquids	591	0	2,025	-701	0	-1,386	114,071	0	-10,362	11,211
Unrefined Oil	591	0	0	-7	0	0	584	0	0	69,008
Motor Gas Blending Components	0	0	2,025	-405	0	-738	8,488	0	-7,402	40,861
Aviation Gasoline Blending Components	0	0	0	-405	0	-658	2,559	0	-3,666	18,490
Aviation Gasoline Blending Components	0	0	0	-280	0	0	-180	0	0	242
Finished Petroleum Products										
Finished Motor Gasoline	346	194,263	6,248	-2,402	6	-191,277	0	9,193	81,885	133,077
Finished Leaded Motor Gasoline	0	34,340	( <sup>4</sup> )	-600	0	-1,577	0	553	31,340	47,250
Finished Unleaded Motor Gasoline	0	42,716	( <sup>4</sup> )	1,085	0	-28,547	0	553	14,601	22,658
Gasohol	0	52,023	0	-1,685	0	-33,600	0	0	16,738	24,652
Finished Aviation Gasoline	80	320	0	0	0	0	0	0	0	0
Jet-A Type Jet Fuel	0	0	0	0	0	0	0	0	0	0
Jet-B Type Jet Fuel	0	320	0	-35	0	-384	0	0	-17	774
Kerosene	0	10,765	0	-440	0	-775	0	0	0	2,085
Distillate Fuel Oil	0	2,079	0	17	0	-6138	0	0	0	10,480
Residual Fuel Oil	4	2,079	0	288	0	-479	0	0	0	1,869
Naphta and Other Oils for Petro. Prod.	1	39,037	10	-1,677	0	-479	0	254	13,967	34,150
Specialty Naphtha	0	15,445	3,463	705	0	-23,432	0	0	5,944	16,399
Special Naphtha	0	9,719	2,699	-42	0	-3,462	0	0	340	12,068
Waxes	91	1,380	0	-303	0	-401	0	48	622	1,748
Waxes	0	2,084	46	-67	0	-748	0	339	1,566	6,312
Petroleum Coke	0	229	20	10	0	0	0	30	228	462
Asphalt	0	4,567	0	138	0	0	0	0	3,522	748
Road Oil	0	3,478	0	375	0	-401	0	1	2,031	3,473
Bit Gas	0	0	0	0	0	0	0	0	0	2
Bit Gas	0	0	0	0	0	0	0	0	0	0
Miscellaneous Products	209	8,729	1	-222	0	0	0	0	8,725	2,202
Total	165,690	202,332	70,589	-11,641	-29,378	-46,790	195,303	16,139	10,415	709,981

1 Unaccounted for made oil is a blending item.  
2 Total exports reference oil.

1 Unaccounted for crude oil is a blending item.

2 Total equals refinery use and loss.

3 Includes natural gasoline, isopentane, unrefined stream, and plant condensate.

4 Less than 500 barrels.

5 Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 9. PAD District IV Supply and Disposition of Crude Oil and Petroleum Products, July 1962  
(Thousands of Barrels)

Commodity	Supply					Disposition					
	Field Production	Refinery Production	Imports	Stock Withdrawal (+) or Addition (-)	Uncounted For Crude Oil	Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Refinery Inputs	Exports	Products Supplied	Ending Stocks
Crude Oil (including lease condensate)	18,465	0	1,415	1,337	-7,267	-6	0	13,844	0	0	13,716
Natural Gas Plant Liquids and LRGs	2,078	74	401	49	0	0	-264	493	0	1,945	1,155
Liquefied Petroleum Gases	702	70	267	47	0	0	60	339	0	535	302
Ethane	5	4	0	(5)	0	0	0	0	0	0	(5)
Other Products <sup>3</sup>	1,371	0	135	2	0	0	-324	184	0	1,000	253
Other Liquids	71	0	0	544	0	0	0	139	0	476	4,478
Other Hydrocarbons and Alcohol	71	0	0	544	0	0	0	71	0	0	0
Unrefined Oils	0	0	0	287	0	0	0	-203	0	440	2,919
Motor Gasoline Blending Components	0	0	0	307	0	0	0	271	0	36	1,590
Aviation Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0
Refined Petroleum Products	12	14,538	1	450	0	6	248	0	2	15,253	12,337
Fresh Motor Gasoline	0	7,742	0	391	0	0	178	0	0	8,311	4,262
Fresh Lead Motor Gasoline	0	4,564	0	328	0	0	186	0	0	5,428	2,727
Fresh Unleaded Motor Gasoline	0	2,818	0	63	0	0	12	0	0	2,983	1,553
Other Motor Gasoline	0	40	0	-7	0	0	0	0	0	0	0
Fresh Aviation Gasoline	0	40	0	-1	0	0	-129	0	0	384	32
Aviation Gasoline Blending Components	0	397	0	-116	0	0	585	0	0	1,026	739
Kerosene-Type Jet Fuel	0	557	0	5	0	0	0	0	0	41	0
Kerosene	0	5	0	-377	0	0	-438	0	0	3,033	3,389
Distillate Fuel Oil	0	3,808	(5)	-2	0	0	0	0	0	316	485
Heating Fuel Oil	0	312	0	0	0	0	0	0	0	1	7
Gas Oil and Other Oils for Petro. Prod.	0	2	0	-3	0	0	0	0	0	4	0
Sludges and Residuum	0	7	(5)	-6	0	0	0	0	0	1	7
Lighter Oils	0	23	0	-3	0	0	0	0	0	23	84
Waxes	0	6	0	-3	0	0	0	0	0	3	5
Petroleum Coke	0	273	0	0	0	0	0	0	(5)	279	492
Asphalt	0	699	0	563	0	0	0	0	1	1,361	2,438
Road Oil	0	4	0	0	0	0	0	0	0	4	3
Sol Gas	0	553	0	0	0	0	0	0	0	553	0
Macadam Products	12	24	0	(5)	0	0	0	0	0	36	2
Miscellaneous Products	20,626	14,612	1,817	2,390	-7,267	6	-16	14,478	2	17,274	31,689

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

<sup>3</sup> Includes natural gasoline, kerosene, unrefined steam, and plant condensate.

(5) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 10. PAD District V Supply and Disposition of Crude Oil and Petroleum Products, July 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Refinery Inputs	Disposition		
									Exports	Products Supplied	Ending Stocks
<b>Crude Oil (including lease condensate)</b>	87,393	0	6,869	-1,942	-4,394	-1,994	-16,791	63,016	9,156	0	82,396
Natural Gas Plant Liquids and LRGs	1,046	1,400	351	-134	0	0	0	1,005	166	1,492	1,833
Liquefied Petroleum Gases	630	1,388	351	-121	0	0	0	1,711	169	1,371	1,530
Ethane	0	12	0	3	0	0	0	0	0	15	102
Other Products <sup>3</sup>	418	0	0	-16	0	0	0	294	0	106	1
<b>Other Liquids</b>	522	0	221	494	0	0	190	2,459	0	-1,029	39,581
Other Petroleum and Alcohol	522	0	0	1	0	0	0	823	0	0	10
Unrefined Oil	0	0	175	1,296	0	0	19	2,032	0	-25	24,822
Motor Gasoline Blending Components	0	0	47	-849	0	0	-189	0	0	-442	6,821
Aviation Gasoline Blending Components	0	0	0	55	0	0	0	55	0	0	88
<b>Finished Petroleum Products</b>	69,010	3,193	3,193	-2,382	0	1,856	4,353	0	4,232	71,824	55,862
Finished Motor Gasoline	31,054	2,076	2,076	-1,866	0	0	2,144	0	0	33,266	19,165
Finished Aviation Gasoline	14,981	1,431	1,431	-1,081	0	0	870	0	0	15,552	9,982
Finished Unleaded Motor Gasoline	13,526	1,245	1,245	-1,115	0	0	1,271	0	0	17,735	9,735
Gasohol	73	0	0	3	0	0	0	0	0	76	6
Finished Aviation Gasoline	262	0	0	60	0	0	0	0	0	342	558
Naphtea-Type Jet Fuel	1,912	0	0	-110	0	0	264	0	0	2,086	1,418
Kerosene-Type Jet Fuel	6,634	225	225	-198	0	0	336	0	32	6,965	6,090
Kerosene	161	0	0	16	0	0	0	0	0	177	169
Distillate Fuel Oil	9,937	310	310	113	0	364	701	0	380	11,035	10,526
Residual Fuel Oil	8,911	243	243	-133	0	1,252	894	0	1,262	9,830	9,369
Other Petroleum and Other Oils for Petro. Prod.	435	66	66	-14	0	0	0	0	0	15	10
Special Naphtha	139	174	174	-82	0	0	0	0	0	319	338
Lubricants	459	0	0	-32	0	0	44	0	51	420	1,462
Waxes	52	4	4	12	0	0	0	0	3	64	47
Petroleum Coke	3,471	0	0	-222	0	0	0	0	0	1,217	2,594
Asphalt	1,785	0	0	283	0	0	0	0	2,032	1,217	2,594
Other Petroleum Products	21	0	0	0	0	0	0	0	1	2,067	2,208
SBL Gas	3,678	0	0	-42	0	0	0	0	0	-11	33
Other Petroleum Products	283	0	0	-143	0	0	0	0	0	3,219	0
<b>Total</b>	88,861	70,416	10,935	-3,844	-4,394	-38	-12,210	66,476	10,555	72,386	173,272

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes natural gasoline, kerosenes, unrefined motor gasolines, and plant condensate.

(\*) Less than 500 barrels.

(\*) Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 11. Production of Crude Oil (Including Lease Condensate) by PAD District and State, for the Most Current Month,<sup>1</sup> May 1982  
(Thousands of Barrels)

PAD District and State	Production	
	Total	Daily Average
<b>PAD District I</b>		
Florida	2,204	71
New York	E 67	2
Pennsylvania	E 207	7
Virginia	0	0
West Virginia	E 198	6
<b>Total</b>	<b>E 2,676</b>	<b>86</b>
<b>PAD District II</b>		
Illinois	2,221	72
Indiana	E 580	19
Kansas	5,035	181
Kentucky	E 547	18
Michigan	2,516	81
Mexican	E 7	(h)
Nebraska	994	19
North Dakota	3,934	127
Ohio	E 1,154	37
Oklahoma	14,153	462
South Dakota	89	3
Tennessee	100	3
<b>Total</b>	<b>E 31,848</b>	<b>1,027</b>
<b>PAD District III</b>		
Alabama	1,788	57
Arkansas	E 1,576	51
Louisiana	35,879	1,157
Gulf Coast	2,973	96
Rest Of State	38,852	1,253
Total Louisiana	2,962	95
Mississippi		
New Mexico	514	17
Northwestern	5,472	177
Southwestern	6,866	183
Total New Mexico		
THRC District 01	2,264	73
THRC District 02	3,483	112
THRC District 03	11,053	376
THRC District 04	2,438	79
THRC District 05	670	22
THRC District 06, including East Texas	3,267	115
THRC District 07B	2,743	88
THRC District 07C	2,517	81
THRC District 08	19,606	632
THRC District 08A	20,349	658
THRC District 09	3,153	102
THRC District 10	1,798	58
East Texas	4,504	145
<b>Total Texas</b>	<b>79,025</b>	<b>2,549</b>
<b>Total</b>	<b>130,159</b>	<b>4,199</b>

Continued

PAD District and State	Production	
	Total	Daily Average
<b>PAD District IV</b>		
Colorado	2,811	91
Montana	2,597	84
Utah	E 1,549	53
Wyoming	E 11,089	358
<b>Total</b>	<b>E 18,446</b>	<b>585</b>
<b>PAD District V</b>		
Alaska	2,202	74
South Alaska	50,621	1,633
North Slope	52,923	1,707
<b>Total Alaska</b>	<b>28</b>	<b>1</b>
Arizona	6,295	208
California	20,376	694
Central Coastal	17	1
East Central	8,447	224
North	33,037	1,095
South	47	2
<b>Total California</b>	<b>88,925</b>	<b>2,804</b>
<b>Nevada</b>	<b>E 270,064</b>	<b>8,712</b>
<b>United States Total</b>	<b>E 270,064</b>	<b>8,712</b>

<sup>1</sup> Includes offshore production.

(h) Less than 100 barrels.

Source: See Explanatory Notes on Data Collection and Estimation.

E Estimated.

Table 12. Offshore Production of Crude Oil (Including Lease Condensate) By State, for the Most Current Month, May 1982  
(Thousands of Barrels)

State	Offshore Production	
	Total	Daily Average
Alaska <sup>1</sup>	2,038	66
California	2,268	74
Federal	3,418	110
State	5,716	184
Louisiana	22,023	732
Federal	2,062	67
State	24,785	800
Texas	1,518	49
Federal	1,227	40
State	1,945	53
United States Total	34,184	1,103

<sup>1</sup> These production data are included in Table 11.

<sup>2</sup> All offshore production is State Condensate.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 13. Production of Lease Condensate by State, for the Most Current Month, May 1982  
(Thousands of Barrels)

State	Lease Condensate Production	
	Total	Daily Average
Alabama	711	23
California	12	(9)
Louisiana	6,771	186
Mississippi	161	5
Nebraska	371	12
Oklahoma	28	1
Texas	3,678	119
Total	11,652	376

<sup>1</sup> These production data are included in Table 11. Small amounts of lease condensate are known to be produced in states other than those listed, however, statistics on this production are not available.

(9) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 14. Natural Gas Processing Plant Production of Petroleum Products by PAD District,<sup>1</sup> July 1982  
(Thousands of Barrels)

Commodity	PAD District I			PAD District II				PAD District III			PAD District IV			PAD District V			United States
	Apalachicola #1	East Coast	Total	Apalachicola #2	Ind. Ill. #3	Min. Wisc. #4	Okla. Kans. Mo. #5	Texas Inland	Texas Gulf Coast	La. Ark. #6	No. La. #7	New Mexico	Total	Rocky Mts. #8	Des. IV #9	West Coast #10	
Natural Gas Plant Liquids	537	371	1,008	0	2,060	367	5,912	8,379	18,329	2,906	8,929	813	3,382	34,238	2,078	1,646	46,749
Isopentane	0	0	0	0	0	0	0	204	406	118	117	0	0	641	2	0	846
Natural Gasoline	92	37	129	0	69	94	1,178	1,340	2,212	-1,010	1,486	134	269	2,470	374	467	4,769
Unfractionated Stream	0	1	1	0	1,014	53	-2,362	-1,285	7,504	-8,964	940	188	2,306	1,573	985	-40	1,233
Plant Condensate	0	0	0	0	52	0	27	79	251	675	39	-81	1	585	10	0	974
Liquid Petroleum Gases and Ethane	545	354	879	0	946	291	6,866	8,043	7,959	12,897	6,746	573	606	28,668	707	630	38,326
Propane	221	133	354	0	1,171	346	1,711	1,901	2,344	2,499	2,166	33	74	5,946	5	0	7,951
Butane	118	126	234	0	395	142	1,219	1,277	3,544	2,807	1,443	148	340	9,408	454	382	13,784
Isobutane	0	0	0	0	76	77	1,097	1,251	1,443	2,314	824	11	130	4,602	239	227	6,859
Ethane-Propane Mixtures	0	0	0	0	0	0	0	65	26	1	1	0	0	103	3	0	103
Isobutane	22	17	40	0	45	12	1,581	1,581	2,718	727	727	10	166	5,369	6	23	6,950
Finished Motor Gasoline	34	0	34	0	0	0	0	483	903	1,146	807	155	0	0	0	0	3,328
Finished Unleaded Motor Gasoline	34	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naphtha-Type Jet Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kerosene-Type Jet Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	0	0	0	0	0	0	0	1	1	1	0	0	2	4	0	0	4
Distillate Fuel Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microblends	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microblends Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production	671	371	1,042	0	2,062	367	5,924	8,394	18,659	2,859	8,911	817	3,387	34,593	2,090	1,646	47,156

<sup>1</sup> Production represents quantity of natural gas processing plant output less input to fractionating facilities.

From 100 barrels.

Note: Totals may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 15. Refinery Input of Crude Oil and Petroleum Products by PAD District, July 1982  
(Thousands of Barrels, Except Where Noted)

Commodity	PAD District I				PAD District II				PAD District III				Total		PAD Dist. IV Total Coast	PAD Dist. V Total Coast	United States
	East Coast	West Coast	Appl. Chain Coast	Total	Appl. Chain Coast	West. Coast	Appl. Chain Coast	Total	Texas Inland	Texas Gulf Coast	La. Coast	Ark. Coast	New Mexico	Total			
Crude Oil (including lease condensate)	37,410	2,600	40,010	1,744	55,621	8,521	25,012	83,938	14,889	87,820	64,162	5,494	2,721	175,086	13,844	53,015	285,853
Natural Gas Plant Liquids																	
Unfractionated Stream	19	0	19	0	389	996	2,016	1,043	2,223	251	100	205	0	3,822	91	294	6,262
Light Condensate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquid Ethane	170	3	173	117	1,639	272	771	2,799	529	1,226	1,865	134	0	1,075	90	0	1,208
Propane	0	0	0	0	0	0	0	0	0	63	45	0	0	3,948	309	711	7,841
Normal Butane	0	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	182
Other Butanes	10	0	10	37	682	134	372	1,227	89	821	1,425	21	0	2,356	52	130	3,273
Other Pentanes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ethane-Propane Isomers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Isobutane	160	3	163	86	869	34	525	1,559	354	288	109	103	31	895	55	378	2,991
Other Liquids																	
Other Hydrocarbons	141	1	142	0	416	0	0	416	5	300	269	0	0	584	71	517	1,720
Asphalt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unfractionated Oil (net)	1,983	5	2,002	34	1,365	-48	487	1,785	600	8,417	1,598	115	68	8,408	-253	2,037	14,112
Motor Gasoline Blending																	
Components (net)	552	99	651	-23	527	-17	-462	25	-725	796	2,572	17	-101	2,559	271	-159	3,357
Aviation Gasoline Blending																	
Components (net)	0	0	0	0	1	0	5	6	-136	-34	0	0	0	-150	0	55	-89
Total Input to Refineries	40,226	2,772	43,027	1,872	62,311	9,107	25,796	101,888	16,260	95,598	70,391	5,130	2,924	195,303	14,476	66,476	420,410
Crude Oil Distillation																	
Gross Input (daily average)	1,257	87	1,354	61	1,900	283	817	3,120	537	2,891	2,172	190	96	5,844	453	2,114	12,596
Operating Capacity (daily average)	1,553	162	1,746	66	2,302	295	963	3,088	525	4,118	2,755	264	120	7,907	608	3,148	17,148
Operating Ratio (percent)	77.6	53.8	75.4	92.5	83.0	99.3	84.5	84.5	80.7	70.0	78.5	69.7	79.2	73.9	74.6	67.3	78.2
Crude Oil Qualities																	
Sulfur Content, Weighted Average (percent)	1.20	.23	1.13	.84	.91	1.54	.54	.87	.54	.86	.89	1.41	.24	.86	.81	1.00	.91
API Gravity, Weighted Average	32.56	40.82	33.09	25.20	34.64	31.31	37.41	35.09	37.20	34.25	33.56	32.53	40.03	34.33	36.08	25.83	33.02

1. Reproportion gross input divided by operable capacity.  
Notes: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation.



Commodity	PAD District I				PAD District II				PAD District III				PAD District IV				PAD District V			
	East Coast	Appalachian	Total	Appalachian	Ind. N.Y.	Min. Wisc.	Kans. Mo.	Ohio	Total	Texas	Guif Coast	La. Coast	No. La. Afr.	New Mexico	Total	Rocky Mts.	Dak. Vt.	West Coast	Unfed	
Liquid Petroleum Gases and Ethane	1,329	14	1,343	33	1,665	188	524	2,410	224	2,440	1,250	75	80	4,069	74	1,400	9,266			
For Petrochemical Feedstock Use	346	0	346	0	186	1	478	252	12	1,263	216	6	6	0	1,627	0	219	2,316		
For Other Uses	983	14	997	33	1,479	187	478	2,178	212	1,278	1,034	69	74	4,069	74	1,181	8,950			
Ethane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	121		
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Propane	1,088	14	1,102	33	1,629	185	652	2,449	209	2,240	1,242	80	83	3,779	161	923	8,264			
For Petrochemical Feedstock Use	308	0	308	0	185	0	455	231	0	876	105	0	0	881	1	178	1,697			
For Other Uses	780	14	794	33	1,443	185	557	2,218	209	1,364	1,137	80	83	2,898	160	745	6,567			
Butane	247	0	247	0	17	3	78	218	200	1,359	1,137	60	53	2,758	160	727	6,667			
For Petrochemical Feedstock Use	38	0	38	0	1	0	1	0	361	85	6	0	452	0	43	534	43	534		
For Other Uses	209	0	209	0	17	2	78	218	200	1,359	1,137	60	53	2,758	160	727	6,667			
Isobutane	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Isobutane for Petro. Feed. Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Finished Motor Gasoline	18,321	587	20,308	1,023	35,698	5,103	15,117	56,941	8,176	47,765	32,960	2,027	1,341	43,349	7,342	31,054	210,585			
For Petrochemical Feedstock Use	8,044	482	8,526	517	15,396	2,955	8,903	28,771	3,917	10,021	17,280	1,330	768	42,316	4,904	14,901	90,548			
For Other Uses	11,277	495	11,772	506	15,278	2,148	6,210	28,170	4,259	28,744	17,770	677	573	52,033	2,438	16,153	119,738			
Finished Unleaded Motor Gasoline	11,277	495	11,772	506	15,278	2,148	6,210	28,170	4,259	28,744	17,770	677	573	52,033	2,438	16,153	119,738			
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Automotive Gasoline	483	11	494	48	121	48	478	669	749	1,355	424	232	315	1,055	387	1,019	5,928			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	483	11	494	48	121	48	478	669	749	1,355	424	232	315	1,055	387	1,019	5,928			
Kerosene-Type Jet Fuel	1,498	4	1,502	48	2,844	170	529	3,501	715	3,436	6,569	14	31	10,755	557	5,634	22,049			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	1,498	4	1,502	48	2,844	170	529	3,501	715	3,436	6,569	14	31	10,755	557	5,634	22,049			
Distillate Fuel Oil	43	21	64	22	362	37	32	396	63	949	1,060	4	6	2,079	5	161	2,653			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	43	21	64	22	362	37	32	396	63	949	1,060	4	6	2,079	5	161	2,653			
Distillate Fuel Oil Less No. 4	8,310	696	9,006	469	12,463	1,943	7,911	22,052	3,596	21,656	12,191	1,429	794	20,729	3,662	9,633	84,485			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	8,310	696	9,006	469	12,463	1,943	7,911	22,052	3,596	21,656	12,191	1,429	794	20,729	3,662	9,633	84,485			
Residual Fuel Oil	3,725	213	3,938	74	2,349	462	614	3,399	669	7,064	7,150	590	122	15,445	312	8,812	31,907			
For Petrochemical Feedstock Use	402	0	402	0	81	0	97	188	456	3,162	1,133	1	0	3,668	2	261	4,379			
For Other Uses	173	1	174	0	2,268	0	517	1,661	2,913	3,902	2,948	54	0	1,253	0	9,551	3,031			
Other Oils > 400 Deg. For Petro. Feed. Use	6	18	24	0	272	0	201	473	139	988	19	344	0	1,380	7	139	2,033			
For Petrochemical Feedstock Use	16	36	50	0	272	0	201	473	139	988	19	344	0	1,380	7	139	2,033			
For Other Uses	16	36	50	0	272	0	201	473	139	988	19	344	0	1,380	7	139	2,033			
Special Naphtha	58	215	273	0	927	0	260	637	0	673	403	82	0	1,348	28	299	2,485			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	58	215	273	0	927	0	260	637	0	673	403	82	0	1,348	28	299	2,485			
Other Grades	13	82	95	0	-15	0	22	105	19	1,035	76	123	0	1,363	-2	120	1,694			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	13	82	95	0	-15	0	22	105	19	1,035	76	123	0	1,363	-2	120	1,694			
Microcrystalline	5	27	32	0	0	0	17	7	7	19	0	34	0	60	0	0	104			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	5	27	32	0	0	0	17	7	7	19	0	34	0	60	0	0	104			
Crystalline-Fully Refined	8	43	51	0	1	0	4	0	0	53	0	0	0	53	0	0	17	126		
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	8	43	51	0	1	0	4	0	0	53	0	0	0	53	0	0	17	126		
Crystalline-Other	1,333	2	1,335	30	2,082	345	598	3,395	315	2,784	1,693	125	10	4,027	273	3,471	13,381			
For Petrochemical Feedstock Use	962	0	962	0	1,165	219	547	1,951	67	1,265	976	102	0	2,440	129	2,569	7,675			
For Other Uses	371	2	373	30	917	126	551	2,444	248	1,519	717	23	10	1,587	144	1,731	10,706			
Marketable	962	0	962	0	1,165	219	547	1,951	67	1,265	976	102	0	2,440	129	2,569	7,675			
Calend	3,175	42	3,217	55	2,195	845	1,270	3,650	280	2,370	1,693	828	84	3,476	669	1,731	13,381			
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
For Other Uses	3,175	42	3,217	55	2,195	845	1,270	3,650	280	2,370	1,693	828	84	3,476	669	1,731	13,381			
Rock Oil	1,818	125	1,943	78	2,860	274	1,141	4,162	436	5,212	2,800	201	56	8,726	53	3,579	18,959			
For Petrochemical Feedstock Use	42	0	42	0	1	0	1	5	398	113	0	0	0	426	23	51	545			
For Other Uses	1,774	125	1,899	78	2,859	274	1,141	4,157	431	4,804	2,787	201	56	8,299	53	3,528	18,414			
Miscellaneous Products	617	44	661	3	127	22	53	205	196	795	332	46	0	1,279	24	250	2,482			
Total Output	42,352	2,706	45,058	1,933	85,731	9,556	27,592	104,632	16,557	100,887	72,745	6,179	2,964	202,382	14,612	70,416	437,270			
Processing Gain(-) or Loss(+)	-2,257	66	-1,991	-61	-2,420	-178	-1,134	-3,794	-297	-4,389	-2,354	-49	-40	-7,029	-126	-3,840	-15,800			

1 Represents the arithmetic difference between input and output.

Notes: Total may not equal sum of components due to independent rounding.

See Explanatory Notes on negative product yield.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 17. Percent Refinery Yield of Petroleum Products by PAD District.<sup>1</sup> July 1989

Commodity	PAD District I		PAD District II		PAD District III		PAD District IV		PAD District V		PAD District VI		PAD District VII		PAD District VIII		PAD District IX		PAD District X	
	Elas. Count	Total	Appl. Chain #1	Ind. #2	Min. Wac. #3	OMA. Elec. #4	Total	Treas. Island	Treas. Coast	PAID Dist. I	PAID Dist. II	PAID Dist. III	PAID Dist. IV	PAID Dist. V	PAID Dist. VI	PAID Dist. VII	PAID Dist. VIII	PAID Dist. IX	PAID Dist. X	
Finished Motor Gasoline	46.6	31.8	45.8	52.2	54.0	53.7	54.2	53.9	48.9	45.9	46.0	26.5	43.2	44.9	50.6	45.6	47.8			
Finished Aviation Gasoline	(0)	0	(0)	0	2	0	2	2	9	2	1	0	0	0	0	0	0			
Liquefied Petroleum Gas	3.4	3.2	1.9	2.8	2.2	2.1	2.0	2.0	1	2	1	1	0	0	0	0	0			
Naphtha-Type Jet Fuel	3.2	4.0	3.4	1.1	7	8	1.9	1.0	4.6	2.6	1.9	1.3	2.9	2.2	5	3.2	2			
Kerosene	3.5	2	3.4	2.7	4.7	2.0	3.8	4.6	3	6	4.1	11.3	17	28	2.9	1	2.9			
Aviation Fuel Oil	21.1	25.8	21	0	6	4	-1	4	4	10	6	10.0	2	1.1	5.9	4.1	10.2			
Distillate Fuel Oil	8.5	8.2	9.4	25.4	26.6	29.0	29.2	23.1	23.3	23.2	18.1	28.3	-2	1.1	(0)	2	7			
Other Fuel Oil	1.2	0	1.1	3.7	5.5	2.4	3.6	4.3	7.4	16.9	19	0	0	1.6	2.3	13.1	21.2			
Other Oils - 400 Wgt. F. Home. Use	4	(0)	4	0	2.8	0	4	1.8	1.9	3.5	4.0	1.0	0	2.4	0	4	1.1			
Special Naphtha	(0)	7	1	0	5	0	0	5	3	10	(0)	4.4	0	8	1	2	3			
Wax	19.4	14.7	15.0	0	5.9	0	12.9	9	1	(0)	1	1.0	3.8	0	1.5	2	7			
Petroleum Coke	3.4	3.1	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Other Petroleum Products	7.9	1.0	7.5	8.7	3.4	4.1	3.8	3.5	2.0	3.0	2.6	2.2	4	2.7	2.0	5.3	3.3			
Steam Gas for Power	0	0	0	4.1	7.6	2.8	4.1	3.6	7	2.0	14.7	3	1.9	5.1	2.7	3.3	0			
Steam Gas for Other Uses	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
SRH Gas for Other Uses	4.6	4.8	4.5	4.4	4.4	3.2	4.5	4.1	2.9	3.2	4.1	3.8	2.0	4.5	3.6	5.4	4.8			
Microsilica Products	1.6	1.7	1.6	2	2	3	2	2	7	5	5	8	0	7	2	5	6			
Processing Gases or Losses + M	-8.2	2.5	-1.7	-3.4	-4.0	-1.8	-3.5	-1.9	-4.6	-3.6	-3.9	-1.4	2.6	-1.0	-6.1	-4.2				

1. Based on costs per input and net returns of unfinished oils.  
2. Based on costs per input and net returns of unfinished oils.  
3. Based on costs per input and net returns of unfinished oils.

Based on total finished motor gasoline output plus lost production at other refineries

people put together

<sup>a</sup> Based on finished aviation gasoline output plus net output.

represents the arithmetic difference between  $\text{In}(\text{out})$  and  $\text{In}(\text{in})$ .

by less than 0.05 percent.

Note: Total may not equal sum of components due to rounding

used Explanatory Notes on native product value

Source: see Explanatory Notes on Data Collection and Estimation

Table 18. Refinery Receipts of Crude Oil by PAD District, July 1982  
(Thousands of Barrels)

Method	PAD District I			PAD District II			PAD District III			PAD District IV			United States				
	Est Coast	Appal- chian #1	Total	Appal- chian #2	Ind. Mfr.	Mine, Wisc., Dair.	Cem. Kans., Mo.	Totals Coast	Gulf Coast	No. La. Ark.	New Mexico	Total		PAD Rocky Mts.	PAD West Coast		
Trucks	0	1,845	1,845	1,233	37,789	4,206	23,124	66,252	12,937	47,904	29,775	3,578	96,397	11,644	27,692	293,740	
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	0	0	0	389	18,193	4,232	831	23,706	1,014	14,089	3,024	716	10,343	1,294	737	45,060	
Trucks	4,601	0	4,601	0	0	0	0	0	0	4,498	4,942	0	9,740	0	29,759	44,597	
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	25,810	0	25,810	0	0	0	0	0	0	15,686	22,320	0	38,006	0	6,294	70,300	
Barge	0	29	29	0	1,022	0	1,030	19	4,896	4,987	77	0	9,959	0	263	11,261	
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	5,576	0	5,576	0	1,193	0	1,193	0	142	585	374	0	1,101	0	7,830	7,830	
Truck Cars	81	264	345	0	0	0	0	0	0	0	0	0	20	0	365	0	
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trucks	0	326	326	111	434	15	929	1,489	825	216	476	959	2,901	866	1,564	7,266	
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	0	0	0	0	0	0	0	0	193	0	0	0	103	1	0	104	
Total	4,602	2,464	7,066	1,444	39,253	4,021	24,053	66,771	13,761	57,674	33,040	4,933	2,509	118,937	12,610	59,285	256,729
Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign	21,468	0	21,468	380	18,346	4,332	831	24,550	1,267	23,517	30,429	1,090	59,643	1,296	7,021	129,214	

Note: Total may not equal sum of components due to independent rounding.

Table 19. Fuels Consumed at Refineries by PAD District, July 1982  
(Thousands of Barrels, Except Where Noted)

[illegible]

i. includes liquefied refinery gases;  
ii. includes small quantities of other petroleum products (e.g., unfinished oil, kerosene, etc.) consumed at refinery;  
iii. Less than 500 barrels except where noted  
Note: Total may not equal sum of components due to independent rounding.  
Source: U.S. Energy Information Administration, Monthly Energy Review, Table A-10.1, "Petroleum and Other Liquids: Imports and Exports," May 2008.

Table 20. Imports of Crude Oil and Petroleum Products by PAD District, July 1982  
(Thousands of Barrels)

Commodity	Petroleum Administration for Defense District					
	I	II	III	IV	V	Total
Crude Oil (including lease condensate) 1, 2	32,234	22,657	68,262	1,415	6,869	131,586
Natural Gas Liquids						
Natural Gasoline and Inexpensive	405	5,310	2,117	491	351	8,584
Plant Condensate	(a)	0	1,315	0	0	1,315
Liquefied Petroleum Gases and Ethane	312	5,310	802	257	351	7,042
Ethane	0	1,721	0	0	0	1,721
Butane	201	931	0	139	53	1,324
Propane	111	770	0	128	236	1,401
Butane-Propane Mixtures	0	770	0	0	0	770
Ethane-Propane Mixtures	0	1,859	0	0	0	1,859
Other Liquids 1	2,524	530	2,055	0	221	5,310
Unrefined Oils 1	1,853	121	2,055	0	175	4,155
Motor Gasoline Blending Components	701	408	0	0	47	1,156
Finished Petroleum Products	22,061	644	6,246	1	3,103	32,057
Finished Motor Gasoline	4,066	55	(a)	0	2,075	6,196
Finished Leaded Motor Gasoline	2,415	55	(a)	0	1,421	3,946
Finished Unleaded Motor Gasoline	1,653	0	0	0	654	2,307
Finished Aviation Gasoline	(a)	0	0	0	0	0
Naptha-Type Jet Fuel	250	0	0	0	0	250
Kerosene-Type Jet Fuel	0	0	0	0	0	0
Jet-A Type Fuel	0	0	0	0	0	0
Propellants	0	0	0	0	0	0
Diesel Fuel	148	0	0	0	0	148
Diesel Fuel Oil	3,417	105	10	(a)	0	3,532
Bunkers	0	0	0	0	0	0
For military offshore use	0	0	0	0	0	0
No. 2 fuel oil	3,417	100	10	(a)	0	3,527
Residual Fuel Oil	13,724	303	3,463	0	343	17,843
Bunkers	0	0	0	0	0	0
For military offshore use	0	0	0	0	0	0
Other	13,724	303	3,463	0	343	17,843
Naphtha < 400 Deg. for Petro. Feed Use	891	0	3,463	0	343	4,697
Other Oils > 400 Deg. for Petro. Feed Use	19	127	0	0	0	146
Special Naphtha	233	49	46	(a)	174	502
Lubricants	3	3	20	0	4	29
Wax	195	19	0	0	0	214
Asphalt	1	2	1	0	0	3
Miscellaneous Products						
Total Imports	58,293	29,270	78,560	1,817	10,635	178,648

1. Crude oil and unrefined oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District in which they are produced.

2. Includes crude oil reported for storage in the Strategic Petroleum Reserve.

(a) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation.

Source	Crude Oil 1	LPG and Ethane	Unrefined Oil	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kerosene	Distill Fuel Oil	Residual Fuel Oil	Special Naphthas	Other Products 2	Total Products	Total Petroleum (Daily Average)
Arab OPEC													
Algeria	2,276	0	266	0	0	0	0	221	1,034	0	0	1,521	3,797
Libya	0	0	0	0	0	0	0	0	533	0	0	533	17
Qatar	639	0	0	0	0	0	0	0	0	0	0	0	639
Saudi Arabia	15,309	0	195	0	0	0	0	0	655	0	834	1,664	19,972
United Arab Emirates	2,871	0	0	0	0	0	0	0	0	0	481	929	3,810
Subtotal Arab OPEC	24,095	0	461	438	0	0	0	221	2,301	0	1,315	4,657	28,702
Other OPEC													
Ecuador	1,090	0	0	0	0	0	0	0	0	0	0	0	1,090
Gabon	669	0	0	0	0	0	0	0	0	0	0	0	669
Indonesia	9,945	0	0	0	185	0	0	67	170	0	0	480	10,155
Iran	2,153	0	0	0	0	0	0	0	0	0	0	0	2,153
Nigeria	29,224	0	0	0	0	0	0	0	0	(1)	0	(1)	29,224
Venezuela	4,854	0	595	0	253	0	0	495	4,811	0	0	6,155	10,006
Subtotal Other OPEC	46,406	0	595	438	438	0	0	582	4,399	(1)	0	6,895	53,100
Other													
Angola	2,257	0	0	0	0	0	0	0	0	0	0	0	2,257
Armenia	14	0	278	0	0	0	0	0	0	0	0	0	292
Bahrain	0	0	25	0	0	0	0	0	0	0	0	0	25
Brazil	447	0	0	0	734	0	0	0	734	0	0	734	1,111
Burkina Faso	0	0	0	0	0	0	0	19	0	0	0	19	19
Canada	7,654	6,172	125	419	568	0	0	157	541	165	59	232	18,226
France	0	0	0	0	0	0	0	0	172	0	0	172	172
Ghana	0	0	0	0	0	0	0	0	399	0	0	399	399
Malaysia	1,593	0	0	0	0	0	0	0	0	0	0	0	1,593
Mexico	23,081	708	0	0	0	0	0	0	0	0	0	0	23,789
Netherlands Antilles	0	0	1,116	0	552	0	0	0	47	0	0	47	1,163
Norway	4,481	0	0	0	260	0	0	0	3,221	0	0	3,221	4,481
People's Republic of China	1,101	0	175	0	1,061	0	0	7	70	156	(1)	1,430	2,559
Peru	408	0	0	0	0	0	0	0	262	0	0	262	670
Puerto Rico	0	0	354	0	135	0	0	460	0	0	0	460	814
Tanzania and Togo	3,212	0	0	0	0	0	0	217	0	0	16	233	3,445
Turkey	1	0	0	0	0	0	0	0	0	0	0	0	1
Virgin Islands	13,112	0	0	0	0	0	0	0	0	0	0	0	13,112
Zaire	696	0	80	0	2,463	475	148	1,342	3,102	0	(1)	3,031	11,499
Other Western Hemisphere	142	0	0	0	0	0	0	0	585	8	0	593	735
Other Eastern Hemisphere	2,200	(1)	775	279	295	0	0	559	626	0	100	2,033	4,833
Subtotal Other	60,596	7,942	3,098	698	5,767	475	148	3,033	10,552	330	4,556	35,810	96,796
Total Imports	131,096	7,942	4,135	1,166	6,205	475	148	3,837	17,843	330	5,872	47,052	179,648

See footnotes at end of table.

Table 21. Imports of Crude Oil and Petroleum Products by Source and PAD District, July 1982  
(Thousands of Barrels)

Source	Crude Oil 1	LPG and Ethane	Unfractionated Crude Oil	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kerosene	Diesel Fuel Oil	Residual Fuel Oil	Special Naphthas	Other Products	Total Products	Total Petroleum	Total (July Average)
<b>Arab OPEC</b>														
Algeria	810	0	586	0	0	0	0	221	587	0	0	1,174	1,884	64
Libya	6,557	0	195	0	0	0	0	0	0	0	0	1,752	2,945	216
United Arab Emirates	0	0	480	0	0	0	0	0	0	0	0	458	450	115
Subtotal Arab OPEC	7,367	0	461	458	0	0	0	221	687	0	0	3,382	5,184	297
<b>Other OPEC</b>														
Ecuador	705	0	0	0	0	0	0	0	0	0	0	0	705	33
Indonesia	3,162	0	0	0	0	0	0	0	0	0	0	0	3,162	132
Mexico	4,343	0	0	0	0	0	0	0	0	0	0	0	4,343	159
Venezuela	2,037	0	319	0	253	0	0	495	3,427	0	0	4,535	6,573	212
Subtotal Other OPEC	10,847	0	319	253	253	0	0	495	3,427	0	0	4,535	12,383	498
<b>Other</b>														
Algeria	464	0	0	0	0	0	0	0	0	0	0	0	464	15
Bolivia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brazil	447	0	0	0	734	0	0	0	734	0	0	734	734	34
Canada	245	0	3	0	206	0	0	48	208	19	238	1,057	1,181	34
France	0	0	0	0	0	0	0	0	172	0	59	232	222	7
Ghana	0	0	0	0	0	0	0	0	399	0	0	399	399	13
Guatemala	0	0	0	0	0	0	0	0	224	0	0	224	224	11
Mexico	4,251	0	0	0	252	0	0	21	0	0	0	523	4,774	163
Netherlands	47	0	0	0	0	0	0	0	0	0	0	0	47	17
Netherlands Antilles	0	0	716	0	309	0	0	0	3,039	0	391	4,452	4,853	144
Norway	2,502	0	0	0	0	0	0	0	0	0	0	0	2,502	83
People's Republic of China	369	0	0	0	0	0	0	0	0	0	(9)	369	369	12
Peru	0	0	0	0	0	0	0	0	202	0	0	202	202	8
Poland	0	0	354	0	135	0	0	0	489	0	175	1,017	1,631	59
Yugoslavia	445	0	0	0	0	0	0	0	0	0	0	445	445	22
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	4,789	0	0	0	1,366	250	148	1,342	3,702	0	(8)	8,028	4,789	154
Virgin Islands	0	0	0	0	0	0	0	0	0	0	687	687	687	259
Zaire	310	0	0	0	0	0	0	0	0	0	0	310	310	10
<b>Other Western</b>														
Hong Kong	0	0	0	0	0	0	0	0	585	0	0	585	585	19
Other Eastern Hemisphere	369	0	243	0	239	0	0	450	104	0	(8)	1,055	1,424	45
Subtotal Other	14,029	312	1,033	243	3,813	250	148	2,701	9,079	19	1,516	19,636	23,626	1,026
<b>Total Imports</b>	<b>32,234</b>	<b>312</b>	<b>1,823</b>	<b>701</b>	<b>4,068</b>	<b>250</b>	<b>148</b>	<b>3,417</b>	<b>13,734</b>	<b>19</b>	<b>1,516</b>	<b>25,909</b>	<b>59,233</b>	<b>1,878</b>
<b>PAD District II</b>														
<b>Arab OPEC</b>														
Algeria	639	0	0	0	0	0	0	0	0	0	0	0	639	21
Libya	680	0	0	0	0	0	0	0	0	0	0	0	680	22
Saudi Arabia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Arab Emirates	737	0	0	0	0	0	0	0	0	0	0	0	737	24
Subtotal Arab OPEC	2,066	0	0	0	0	0	0	0	0	0	0	0	2,066	67

See footnotes at end of table.

(continued)

Source	Crude Oil 1	LPG and Ethane	Unrefined Oils	Gasoline Blending Components	Flasher Motor Gasoline	Jet Fuel	Kerosene	Dist. Fuel Oil	Resid. Fuel Oil	Special Naphthas	Other Prod. Units 2	Total Prod. Units	Total Petro. Num	Total (Daily Average)
PAD District II														
<b>Other OPEC</b>														
Nigeria	5,812	0	0	0	0	0	0	0	0	0	0	0	5,812	187
Subtotal Other OPEC	5,812	0	0	0	0	0	0	0	0	0	0	0	5,812	187
<b>Other</b>														
Canada	5,566	5,310	121	408	62	0	0	100	303	127	72	6,503	12,170	393
France	0	0	0	0	0	0	0	0	0	0	0	0	0	(9)
Mexico	3,012	0	0	0	0	0	0	0	0	0	0	0	3,012	97
Norway	1,527	0	0	0	0	0	0	0	0	0	0	0	1,527	49
United Kingdom	3,805	0	0	0	0	0	0	0	0	0	0	0	3,805	123
Other Eastern Hemisphere	309	0	0	0	0	0	0	0	0	0	0	0	309	32
Subtotal Other	14,599	5,310	121	408	62	0	0	100	303	127	72	6,503	21,503	694
Total Imports	22,957	5,310	121	408	62	0	0	100	303	127	72	6,503	29,370	947
<b>Arab OPEC</b>														
Algeria	1,006	0	0	0	0	0	0	0	347	0	0	347	1,353	44
Kuwait	0	0	0	0	0	0	0	0	533	0	0	533	533	17
Saudi Arabia	11,983	0	0	0	0	0	0	0	835	0	0	835	12,818	404
United Arab Emirates	1,524	0	0	0	0	0	0	0	0	0	0	0	1,524	64
Subtotal Arab OPEC	14,513	0	0	0	0	0	0	0	1,314	0	1,315	2,629	17,052	540
<b>Other OPEC</b>														
Ecuador	385	0	0	0	0	0	0	0	0	0	0	0	385	12
Gabon	680	0	0	0	0	0	0	0	0	0	0	0	680	22
Indonesia	2,536	0	0	0	0	0	0	0	0	0	0	0	2,536	82
Iran	2,153	0	0	0	0	0	0	0	0	0	0	0	2,153	69
Nigeria	17,480	0	0	0	0	0	0	0	0	0	0	0	17,480	564
Venezuela	2,916	0	276	0	0	0	0	0	1,343	0	0	1,619	4,235	137
Subtotal Other OPEC	29,659	0	276	0	0	0	0	0	1,343	0	0	1,619	27,479	886
<b>Other</b>														
Angola	1,783	0	0	0	0	0	0	0	0	0	0	0	1,783	69
Australia	0	84	278	0	0	0	0	0	0	0	0	0	372	12
Bahrain	0	0	209	0	0	0	0	0	0	0	0	0	209	7
Malaysia	512	0	0	0	0	0	0	0	0	0	0	0	512	17
Mexico	15,786	706	0	0	0	0	0	10	238	1	5	962	16,760	541
Netherlands Antilles	0	0	400	0	0	0	0	0	0	0	0	0	400	13
Norway	392	0	0	0	0	0	0	0	0	0	0	0	392	13
People's Republic of China	732	0	0	0	0	0	0	0	0	0	0	0	732	24
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey and Tobago	2,794	0	0	0	0	0	0	0	0	0	0	0	2,794	2
Trinidad	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	4,918	0	0	0	0	0	0	0	0	0	0	0	4,918	168
Virgin Islands	0	0	88	0	0	0	0	0	0	0	0	0	88	1
Zaire	356	0	0	0	0	0	0	0	0	0	0	0	356	87

See footnotes at end of table.

Table 21. Imports of Crude Oil and Petroleum Products by Source and PAD District, July 1982  
(Thousands of Barrels)  
(continued)

Source	Crude Oil	LPG and Ethane	Unfractionated Oil	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kerosene	Dist. Fuel Oil	Resid. Fuel Oil	Special Naphtha	Other Products	Total Products	Total (Daily Average)
PAD District III													
Other													
Other Western	142	0	0	0	0	0	0	0	0	0	0	0	5
Other Eastern Hemisphere	843	0	775	0	0	0	0	0	0	0	0	0	65
Subtotal Other	26,141	802	1,750	0	(9)	0	0	10	805	0	2,760	5,043	2,032
Total Imports	64,302	802	2,075	0	(9)	0	0	10	3,403	0	4,061	10,381	78,583
PAD District IV													
Other													
Other Western	1,415	267	0	0	0	0	0	(9)	0	(9)	135	402	1,817
Subtotal Other	1,415	267	0	0	0	0	0	(9)	0	(9)	135	402	1,817
Total Imports	1,415	267	0	0	0	0	0	(9)	0	(9)	135	402	1,817
PAD District V													
Arab OPEC													
Algeria	480	0	0	0	0	0	0	0	0	0	0	0	480
Subtotal Arab OPEC	480	0	0	0	0	0	0	0	0	0	0	0	480
Other OPEC													
Indonesia	3,987	0	0	0	185	0	0	87	178	0	0	450	4,437
Subtotal Other OPEC	3,987	0	0	0	185	0	0	87	178	0	0	450	4,437
Other													
Burundi	0	0	0	0	0	0	0	19	0	0	0	19	1
Cameroon	573	261	0	11	319	0	0	9	0	18	(9)	703	1,282
Chad	1,440	0	0	0	0	0	0	0	0	0	0	1,440	41
Mexico	0	0	0	0	(9)	0	0	0	0	0	0	0	46
Netherlands Antilles	0	0	0	0	0	0	0	42	0	0	4	10	10
People's Republic of China	0	175	0	0	1,051	0	0	0	0	0	0	1,226	47
Peru	408	0	0	0	0	0	0	7	70	150	0	1,458	13
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Eastern Hemisphere	0	(9)	0	0	474	225	0	0	0	0	0	699	23
Subtotal Other	2,402	351	175	47	1,891	225	0	223	164	174	66	3,316	378
Total Imports	6,869	351	175	47	2,076	225	0	310	343	174	66	3,768	10,525

1 Includes crude oil imported for storage in the Strategic Petroleum Reserve.

2 Includes aviation gasoline, waxes, asphalt, kerosene, natural gasoline, isopentane, plant condensate, naphtha less than 400 degrees F, other oils greater than 400 degrees F and miscellaneous products.

(9) Less than 500 barrels or less than 500 barrels per day.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.



Table 22. Exports of Crude Oil and Petroleum Products by PAD District, July 1962  
(Thousands of Barrels)

Commodity	Petroleum Administration for Defense Districts					Total
	I	II	III	IV	V	
Crude Oil (including lease condensate) <sup>1</sup>	(9)	949	0	0	5,156	7,105
Liquefied Petroleum Gases and Ethane						1,154
Ethane	(9)	7	945	0	166	1,154
Propane		0	(9)	0	0	(9)
Butane	18	2	554	0	68	641
Other Petroleum Gases	17	5	262	0	99	512
Refined Petroleum Products						7,589
Gasoline	164	(9)	0	0	41	205
Gasoline-Type Jet Fuel	0	0	553	0	0	553
Kerosene-Type Jet Fuel	0	0	0	0	0	0
Kerosene	0	0	0	0	32	32
Diesel Fuel Oil	1	0	0	0	(9)	1
Distillate Fuel Oil	105	0	254	0	380	739
Residual Fuel Oil	1	0	5,844	0	1,562	7,506
Other Petroleum Products	39	0	51	1	12	103
Other Crude Oil for Petrochem. Feedstock	(9)	52	239	0	111	401
Other Crude Oil for Petrochem. Feedstock	4	1	48	0	3	56
Special Naphthas	125	13	329	1	51	519
Lubricants	4	(9)	30	0	3	37
Petroleum Coke	270	431	1,743	(9)	2,632	4,477
Asphalt	3	45	1	1	1	51
Other Petroleum Products	15	33	0	0	2	50
Total Product Exports	767	561	10,139	2	4,326	15,695
Total Exports	767	1,509	10,139	2	10,555	22,972

<sup>1</sup> Exports of crude oil are prohibited under normal circumstances. Some crude oil is shipped to Canada in exchange on a barrel-for-barrel basis. Shipments of crude oil to Puerto Rico and the Virgin Islands are not prohibited because these territories are U.S. possessions.

(9) Less than 500 barrels.

Notes: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 23. Exports of Crude Oil and Petroleum Products by Destination, July 1982  
(Thousands of Barrels)

Destination	Crude Oil	LPG and Ethane	Finished Motor Gasoline	Jet Fuel	Dist. Fuel Oil	Residual Fuel Oil	Specialty Naphthenes	Lubricants	Wax	Petroleum Coke	Asphalt	Other	Total	Total (Daily Average)
Argentina	0	1	0	0	0	0	0	7	(N)	0	0	(N)	25	(N) 7
Australia	0	2	0	0	0	85	6	12	(N)	0	0	(N)	225	(N) 32
Bahrain	0	35	(N)	0	(N)	948	(N)	0	0	0	0	(N)	968	(N) 32
Belgium & Luxembourg	0	0	0	0	0	0	0	0	0	0	0	(N)	63	(N) 2
Brazil	0	0	0	0	0	0	0	0	0	0	0	(N)	32	(N) 2
Canada	0	0	0	0	0	0	0	10	0	0	0	(N)	113	(N) 0
Cameroun	0	0	0	0	0	0	0	0	0	0	0	(N)	0	(N) 0
Chad	0	0	0	0	0	108	2	58	0	2	45	81	1,505	(N) 49
China (Taiwan)	0	14	(N)	0	(N)	0	0	18	(N)	0	0	0	21	(N) 1
Colombia	0	0	0	0	0	0	0	0	0	0	0	0	14	(N) 1
Costa Rica	0	5	0	0	0	0	0	0	0	0	0	0	1	(N) 1
Cuba	0	23	0	0	0	0	0	0	0	0	0	0	114	(N) 4
Dominican Republic	0	21	0	0	0	0	0	0	0	0	0	0	22	(N) 1
Ecuador	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 1
El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 1
France	0	22	0	0	0	420	0	0	0	0	0	0	95	(N) 3
Germany	0	0	0	0	0	0	0	0	0	0	0	0	19	(N) 19
Ghana	0	0	0	0	0	0	0	0	0	0	0	0	102	(N) 3
Greece	0	0	0	0	0	0	0	0	0	0	0	0	32	(N) 1
Honduras	0	20	0	0	0	0	0	0	0	0	0	0	0	(N) 1
India	0	0	0	0	0	0	0	0	0	0	0	0	25	(N) 1
Indonesia	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 1
Israel	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 1
Italy	0	100	0	0	0	380	0	0	0	0	0	0	0	(N) 0
Japan	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Lebanon	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Libya	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Madagascar	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Malaysia	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Mexico	0	581	732	32	382	0	0	0	0	0	0	0	1	(N) 63
Netherlands	0	182	0	0	0	1,050	13	0	0	2	39	0	1,941	(N) 83
Netherlands Antilles	0	0	0	0	0	400	7	0	0	0	0	49	2,845	(N) 85
New Zealand	0	0	0	0	0	0	0	0	0	0	0	0	413	(N) 13
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	0	12	(N) 2
Nigeria	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Norway	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Pacific Trust Terr.	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Peru	0	0	0	0	0	0	0	0	0	0	0	0	0	(N) 0
Philippines	0	1	0	0	0	0	0	0	0	0	0	0	0	(N) 0

See footnotes at end of table.

Table 23. Exports of Crude Oil and Petroleum Products by Destination, July 1982

(continued)

Destination	Crude Oil <sup>1</sup>	LPG and Ethane	Finished Motor Gasoline	Jet Fuel	Dist. Fuel Oil	Residual Fuel Oil	Special Naphthas	Lubricants	Wax	Petroleum Coke	Asphalt	Other	Total	Total (Daily Average)
Buenos Aires	2,045	0	0	0	0	0	0	9	1	20	0	0	2,717	68
Rio de Janeiro	0	0	0	0	0	0	0	22	0	0	0	0	3	23
Saudi Arabia	0	4	0	0	0	0	0	22	0	0	0	0	3	23
Singapore	0	0	0	0	0	0	0	6	0	0	0	0	1,363	44
Spain	0	1	0	0	0	0	0	10	0	0	0	0	1,227	40
Sri Lanka	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	7	0	0	0	0	1	154
Switzerland	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0	2	0	0	0	0	100	125
Thailand and Tokyo	0	0	0	0	0	0	0	4	0	0	0	0	4	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Arab Emirates	0	0	0	0	0	0	0	11	0	0	0	0	1	111
United Kingdom	0	2	0	0	0	0	0	40	0	0	0	0	40	1
U.S.S.R.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Yemen	0	0	0	0	0	0	0	1	0	0	0	0	2	5
Yemen and	3,820	17	0	0	0	0	0	0	0	14	0	0	3,864	125
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Germany	0	1	0	0	0	0	0	6	22	108	0	0	80	7
Yugoslavia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	201	8	0	0	0	0	0	12	0	0	0	2	305	10
Total	7,105	1,154	758	22	738	7,406	58	508	37	4,477	51	628	22,972	741

<sup>1</sup> Exports of crude oil are prohibited under normal circumstances. Some crude oil is shipped to Canada in exchange, on a barrel-for-barrel basis. Shipments of crude oil to Puerto Rico and the Virgin Islands are not prohibited because these territories are U.S. possessions.

(a) Less than 500 barrels or less than 500 barrels per day.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, July 31, 1982  
(Thousands of Barrels)

Commodity	PAO District I			PAO District II			PAO District III			PAO District IV			United States				
	East Coast	Appalachian	Total	Ind., Ill., Ky.	Calif., Nev., Ariz.	Total	Texas	Gulf Coast	No. La.	New Mexico	Total	PAO District V					
Crude Oil (incl. lease condensate) <sup>1</sup>																	
Refinery	---	14,241	---	---	---	15,023	---	---	---	---	45,081	2,301	23,486	101,644			
Refinery Terminals and Pipelines	---	2,211	---	---	---	3,727	---	---	---	---	1,359	30,049	53,577	107,777			
Leases	---	87	---	---	---	1,379	---	---	---	---	17,864	1,440	1,690	29,256			
Strategic Petroleum Reserve <sup>2</sup>	---	0	---	---	---	0	---	---	---	---	287,154	0	287,154	0			
Alaskan In-Transit	---	0	---	---	---	0	---	---	---	---	0	20,659	20,659	0			
Total	---	17,425	---	---	---	74,126	---	---	---	---	429,863	13,718	82,396	611,720			
Petroleum Products																	
Refinery	42,482	3,568	46,030	1,129	45,307	6,315	22,141	74,892	5,760	79,016	48,020	4,021	1,795	145,378	12,854	65,032	344,766
Bulk Terminal	113,709	130,030	3,637	37,284	0,285	12,223	61,009	4,500	38,351	8,886	4,429	3,443	33,310	2,500	20,357	250,460	250,460
Pipeline	24,332	2,140	26,472	1,416	11,890	3,985	17,184	34,985	8,100	8,935	7,110	13,500	2,852	4,024	10,604	4,024	10,604
Refinery Gas Processing Plant	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Refinery Gas Processing Plant	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total	180,524	13,598	194,196	6,362	87,126	18,455	71,344	132,017	27,267	122,768	75,241	26,062	4,318	286,128	17,391	80,878	762,161
Natural Gasoline and kerosene																	
Refinery	3	0	3	0	29	2	82	113	135	450	163	2	21	791	1	32	940
Refinery Terminals and Pipelines	0	0	0	0	40	62	380	432	382	52	0	17	62	413	176	43	1,058
Natural Gas Processing Plant	16	18	0	20	80	550	801	358	2,797	455	31	85	4,753	48	25	5,713	5,713
Total	8	18	22	0	89	84	1,212	1,456	773	4,259	658	50	178	5,037	215	100	7,111
Unfractionated Stream																	
Positive	0	0	0	0	70	0	8	87	0	28	26	0	0	56	0	0	143
Natural Gas Processing Plant	0	0	0	0	94	1	1,619	1,715	214	3,069	35	32	333	3,063	34	2	5,493
Total	0	0	0	0	172	1	1,626	1,802	214	3,097	63	32	353	3,790	34	2	5,576
Natural Gas Processing Plant																	
Refinery	0	0	0	0	5	0	0	6	172	0	92	0	92	0	270	0	275
Refinery Terminals and Pipelines	0	0	0	0	0	0	0	0	790	318	49	4	17	1,178	0	0	1,178
Natural Gas Processing Plant	0	0	0	0	8	0	4	12	47	20	13	7	1	87	3	0	103
Total	0	0	0	0	13	0	4	17	843	510	62	103	18	1,505	3	0	1,596
Ethane																	
Refinery	0	0	0	0	9	0	0	9	0	395	0	0	0	395	0	1	375
Bulk Terminal	0	0	0	0	59	0	51	123	0	1,121	0	0	0	1,121	0	0	1,241
Pipeline	0	0	0	0	45	945	193	1,182	216	75	112	0	0	3	400	0	1,504
Natural Gas Processing Plant	0	0	0	0	22	0	238	390	23	1,551	142	1	0	1,717	19	0	2,077
Total	0	0	0	0	155	945	587	1,487	239	3,112	254	1	3	3,959	19	1	5,267
Propane for Petrochemical Feedstock Use																	
Refinery	71	0	71	0	95	0	0	95	0	7	450	0	0	457	0	0	520
Total	71	0	71	0	95	0	0	95	0	7	450	0	0	457	0	0	520
Propane for Other Uses																	
Refinery	517	5	522	2	1,059	29	247	1,237	162	403	717	4	4	1,310	155	150	3,474
Bulk Terminal	902	0	912	0	955	67	544	1,516	227	14,260	89	20	0	14,596	16	0	16,738
Pipeline	798	980	1,798	59	1,202	172	1,551	2,804	665	668	298	276	157	1,085	130	0	6,597
Natural Gas Processing Plant	385	616	1,001	2	2,384	423	12,002	16,208	2,439	8,023	5,235	3,814	246	10,544	122	245	36,101
Total	2,122	1,601	3,723	61	5,660	693	15,984	22,498	3,263	31,241	7,280	3,914	467	38,445	415	395	62,004

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, July 31, 1962  
(Thousands of Barrels) (continued)

(Thousands of Barrels)														
Commodity	PAD District I		PAD District II			PAD District III			PAD District IV			Unacid States		
	Ellet Coast	Appala- chian R.R.	Total	Ind., Ill., Ky.	Minn., Dak.	Okla., Kans., Mo.	Texas Inland	Texas Gulf Coast	Calif. Coast	No. La., Ark.	New Mexico		Total	PAD Rocky Mt.
<b>Butane for Petro. Feed, Use</b>														
Refinery	2	0	2	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	0	0	0	0	0	0	0	0	0	0
<b>Butane for Other Uses</b>														
Refinery	176	0	176	453	63	366	1,066	161	806	813	2	2	1,584	570
Bulk Terminal	309	0	309	0	0	87	389	161	4,535	0	0	0	4,786	0
Pipeline	20	157	177	0	907	0	1,988	1,007	73	5	2	87	1,174	112
Natural Gas Processing Plant	39	4	42	0	97	0	1,007	4,295	2,589	136	117	8,155	33	339
Total	544	161	704	1,750	75	2,591	4,589	9,399	9,399	3,407	160	206	15,709	293
<b>Butane-Propene Mixtures for Petro. Feed, Use</b>														
Refinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Butane-Propene Mixtures for Other Uses</b>														
Refinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bulk Terminal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Ethane-Propene Mixtures</b>														
Bulk Terminal	0	0	0	0	0	0	4	224	2,188	2	0	0	2,412	0
Pipeline	0	0	0	66	0	801	607	143	1,825	2	0	0	978	115
Natural Gas Processing Plant	0	0	0	0	0	670	170	22	5,853	0	0	246	6,238	0
Total	0	0	0	66	0	1,471	1,241	1,198	8,176	2	0	392	9,724	115
<b>Isobutanes</b>														
Bulk Terminal	0	3	3	80	135	32	218	465	67	654	10	8	962	34
Pipeline	0	0	0	62	0	0	72	110	1,658	0	0	0	1,768	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	3	142	135	32	290	575	1,665	10	8	55	3,699	34
<b>Other Hydrocarbons and Alcohol</b>														
Refinery	0	23	23	0	105	0	0	105	1	70	22	0	0	0
Total	0	23	23	0	105	0	0	105	1	70	22	0	0	0
<b>Unfinished Oils</b>														
Refinery	3,544	294	3,838	38	3,257	66	1,681	5,041	1,066	7,468	4,934	203	200	13,771
Naphthalene and Lighter	2,805	7	2,812	0	3,361	0	2,494	6,717	1,152	11,369	4,146	30	16	13,107
Kerosene and Lighter Gas Oils	7,210	429	7,639	94	7,545	220	3,185	10,730	2,052	12,782	5,477	90	17	15,557
Heavy Gas Oils	3,198	311	3,509	2	4,004	137	1,918	5,061	2,965	3,814	2,053	24	7	5,825
Residual	16,510	1,041	17,551	134	14,524	469	7,051	22,178	2,897	30,582	15,547	641	313	49,380
Total	35,544	2,944	38,488	38	3,257	66	1,681	5,041	1,066	7,468	4,934	203	200	13,771

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, July 31, 1982  
(Thousands of Barrels) (continued)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV				United States
	East Coast	Appalachian	Total	Ref. & P.	Ind. & Ky.	Miss. & Ala.	Okla. & Kans.	Total	Coast	Inland	Total	Coast	Inland	Total	Coast	Inland	
<b>Motor Gasoline Blending Components</b>																	
Refinery	4,590	81	4,676	92	5,875	563	2,149	8,839	1,454	8,710	7,837	138	276	18,025	1,560	8,143	41,443
Bulk Terminal	271	1	272	0	274	2	83	315	197	44	1	0	0	263	0	476	1,268
Pipeline	0	0	0	0	57	2	307	85	0	0	0	0	0	0	0	0	2,282
Total	4,866	82	4,948	58	6,166	567	2,470	9,261	1,648	8,754	7,838	139	276	18,083	1,560	8,621	43,083
<b>Aviation Gasoline Blending Components</b>																	
Refinery	0	0	0	0	99	0	1	100	32	87	123	0	0	242	0	88	430
Total	0	0	0	0	99	0	1	100	32	87	123	0	0	242	0	88	430
<b>Total Finished Motor Gasoline</b>																	
Refinery	4,306	258	4,574	91	5,872	567	2,515	10,375	1,652	8,201	5,521	645	245	17,204	1,544	8,203	42,590
Bulk Terminal	35,781	3,100	38,881	1,802	17,365	3,295	12,716	27,476	2,104	4,815	1,700	2,717	163	11,438	1,197	9,048	42,590
Pipeline	13,915	830	14,745	605	6,150	1,235	7,385	10,260	2,200	5,317	3,883	7,198	159	10,587	1,231	2,036	51,688
Natural Gas Processing Plant	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	54,017	4,198	58,215	2,498	20,487	5,625	15,733	53,343	5,956	19,333	10,914	10,560	367	47,350	4,382	18,755	102,945
<b>Finished Leaded Motor Gasoline</b>																	
Refinery	2,076	146	2,222	45	2,904	654	2,028	5,641	794	4,037	2,760	442	126	8,198	1,208	3,943	21,112
Bulk Terminal	18,296	1,433	19,745	963	10,711	1,963	2,962	14,489	1,055	2,847	819	1,522	98	8,341	690	1,053	40,324
Pipeline	6,591	294	6,885	442	3,458	737	4,133	8,771	782	2,697	1,728	2,990	82	8,119	829	1,090	25,084
Natural Gas Processing Plant	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	20,968	1,869	20,867	1,440	15,054	3,294	8,143	20,201	2,611	9,481	5,316	4,914	326	22,686	2,727	5,292	93,145
<b>Finished Unleaded Motor Gasoline</b>																	
Refinery	2,290	122	2,412	46	3,048	333	1,487	4,594	838	5,164	2,752	203	89	9,659	734	4,385	21,471
Bulk Terminal	17,488	1,441	18,929	1,419	8,033	1,233	3,543	12,984	1,049	1,969	881	1,185	85	5,158	4,417	4,273	42,080
Pipeline	7,036	539	7,575	466	3,591	485	3,170	6,519	1,638	2,740	1,965	4,248	177	10,488	402	1,016	26,165
Total	27,042	2,299	29,341	1,936	14,332	2,361	6,690	24,417	3,345	9,872	5,598	5,846	231	24,692	5,553	9,758	89,761
<b>Gasohol</b>																	
Refinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
Bulk Terminal	7	0	7	0	21	0	4	25	0	0	0	0	0	0	0	0	32
Total	7	0	7	0	21	0	4	25	0	0	0	0	0	0	0	2	5
<b>Finished Aviation Gasoline</b>																	
Refinery	22	0	22	0	123	0	82	205	13	418	79	0	0	510	18	221	978
Bulk Terminal	388	36	404	13	182	32	35	323	59	20	9	28	41	157	14	331	1,235
Pipeline	0	0	0	0	0	0	83	83	4	1	1	0	0	6	0	0	60
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	200	36	426	13	315	32	231	591	177	439	89	28	41	774	32	558	2,381
<b>Negative-Type Jet Fuel</b>																	
Refinery	204	35	239	0	332	35	361	726	222	958	558	119	234	2,091	188	905	4,152
Bulk Terminal	11	9	20	6	113	14	150	263	160	6	0	47	0	212	18	195	1,000
Pipeline	271	0	271	0	5	5	110	174	154	0	16	188	204	642	152	417	1,600
Total	486	44	530	12	446	106	621	1,165	536	963	574	354	518	2,945	338	1,418	6,816

See footnotes at end of table.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, July 31, 1962

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV				United States
	East Coast	Apalachee	Apalachee	Apalachee	Ind. Ill. N.Y.	Del.	Md.	Ohio	Wisc.	La.	Tex.	Calif.	Wash.	Mont.	Idaho	Utah	
	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels	Barrels
	1,117	0	1,117	0	1,510	102	142	1,795	292	2,709	2,454	15	41	5,491	334	3,667	12,404
Refinery	4,220	125	4,345	55	2,627	381	545	3,329	165	1,994	68	48	25	1,530	246	1,785	11,434
Bulk Terminal	2,458	62	2,520	115	763	171	1,378	2,417	712	1,691	624	1,724	12	3,043	159	3,202	9,577
Pipeline	7,795	187	7,982	211	4,890	514	2,965	7,140	1,071	4,824	3,156	1,767	78	10,864	739	6,090	33,415
Total																	
Kerosene	101	46	147	0	743	27	315	1,030	49	819	561	12	54	1,494	17	142	2,884
Refinery	2,956	319	3,275	0	215	867	75	1,277	8	442	62	18	0	550	24	45	5,215
Bulk Terminal	352	17	370	0	54	0	28	142	2	85	231	144	1	462	0	0	884
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3,419	426	3,845	276	1,762	102	362	2,602	61	1,246	874	174	55	2,510	41	160	9,087
Total Distillate Fuel Oils	6,082	455	6,547	96	7,129	1,605	4,257	13,647	1,147	9,540	5,773	1,242	353	18,055	2,621	4,609	44,279
Refinery	41,873	2,254	44,097	1,251	11,388	3,639	4,485	30,773	1,097	31,960	1,955	1,175	111	7,421	829	5,142	78,262
Bulk Terminal	5,563	188	5,751	545	2,262	362	5,033	8,764	564	1,867	2,100	3,947	170	8,668	539	875	25,007
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	54,526	2,867	57,393	1,856	20,719	6,168	13,306	42,675	2,809	14,602	9,728	6,364	834	34,105	3,369	10,566	140,150
Dist. Fuel Oils Less No. 4 Fuel Oil	5,022	451	5,473	56	7,101	1,605	4,257	13,647	1,091	9,223	5,626	1,138	379	17,326	2,615	4,565	43,491
Refinery	40,730	2,222	42,952	1,271	11,223	3,581	4,495	30,570	1,087	3,183	1,751	1,111	111	7,322	829	5,103	76,776
Bulk Terminal	5,263	188	5,451	545	2,202	362	5,033	8,704	564	1,801	2,080	3,947	170	8,508	539	875	25,607
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	53,365	2,861	56,246	1,872	20,526	6,140	13,096	42,344	2,753	14,313	9,483	6,293	559	33,377	3,366	10,523	145,876
No. 4 Fuel Oil	1,490	4	1,494	0	28	0	0	28	0	28	56	317	137	104	75	689	708
Refinery	1,149	2	1,151	10	165	28	0	263	0	0	0	80	1	0	0	0	1,486
Bulk Terminal	1,143	5	1,148	10	183	28	0	231	56	317	255	169	75	708	3	103	2,274
Total																	
Residual Fuel Oils	3,358	108	3,466	109	2,568	523	495	3,655	375	5,127	4,140	346	60	10,049	485	2,864	24,918
Refinery	23,207	305	23,512	210	8,803	1,615	797	2,087	28	7,714	4,772	75	0	6,350	0	2,911	34,030
Bulk Terminal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	15
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	26,065	413	27,078	325	3,447	658	1,292	5,712	404	6,902	6,912	421	60	16,399	485	9,389	58,963
Naphtalene < 400 Deg. Petro. Feedstock	118	0	118	0	63	0	59	142	132	1,044	270	7	0	1,433	0	295	2,008
Refinery	118	0	118	0	63	0	59	142	132	1,044	270	7	0	1,433	0	295	2,008
Total																	
Other Oils > 400 Deg. Petro. Feedstock	8	122	130	0	165	0	1	168	176	1,213	260	16	0	1,673	0	87	2,076
Refinery	8	122	130	0	165	0	1	168	176	1,213	260	16	0	1,673	0	87	2,076
Total																	
Special Naphtalene	11	47	58	0	204	0	163	387	40	1,263	71	161	0	1,505	7	299	2,308
Refinery	11	47	58	0	204	0	163	387	40	1,263	71	161	0	1,505	7	299	2,308
Bulk Terminal	833	20	853	46	159	11	0	210	0	107	0	0	84	0	0	40	1,193
Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	844	67	911	46	363	11	163	693	147	1,263	71	265	0	1,746	7	339	3,506

See footnotes at end of table.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, July 31, 1982  
(Thousands of Barrels) (continued)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV				United States			
	East Coast	Appalachian	Total	Alaska	Ill. No.	Wisc.	Kans.	Okla.	Mo.	Total	Inland	Coast	Texas Gulf Coast	La. Gulf Coast	No. La. An.	New Mexico		Total	PAD Dist. IV Honey Mt.	PAD Dist. V West Coast
<b>Lubricants</b>																				
Refinery	147	375	522	0	56	0	0	0	0	65	121	0	245	90	0	0	335	5	44	1,027
Blight Stock	893	303	1,196	0	600	0	0	0	0	1,025	1,025	0	1,773	1,025	70	0	2,925	70	938	5,775
Neutral	827	178	1,005	0	150	0	0	0	0	158	308	27	2,271	251	161	0	2,710	8	104	3,925
Other	915	224	1,139	13	1,471	19	50	993	8	22	229	71	3	332	1	3	332	1	716	2,781
Bulk Terminal	2,372	1,170	3,542	13	1,277	19	809	2,119	35	4,311	1,661	352	3	6,312	84	1,402	8,116	1,402	13,518	
<b>Wax, Microcrystalline</b>																				
Refinery	0	46	46	0	0	0	0	22	22	22	22	25	25	25	9	1	0	61	0	129
Total	0	46	46	0	0	0	0	22	22	22	22	25	25	25	9	1	0	61	0	129
<b>Wax, Crystalline-Fully Refined</b>																				
Refinery	11	29	40	0	34	0	24	58	0	57	168	0	0	225	5	31	359	5	31	359
Total	11	29	40	0	34	0	24	58	0	57	168	0	0	225	5	31	359	5	31	359
<b>Wax, Crystalline-Other</b>																				
Refinery	4	66	70	0	2	0	0	0	0	0	0	0	176	0	0	0	176	0	16	270
Total	4	66	70	0	2	0	0	0	0	0	0	0	176	0	0	0	176	0	16	270
<b>Petroleum Coke</b>																				
Refinery	936	0	936	0	436	213	451	1,100	0	1,777	380	191	0	748	482	2,584	5,154	0	0	5,154
Total	936	0	936	0	436	213	451	1,100	0	1,777	380	191	0	748	482	2,584	5,154	0	0	5,154
<b>Asphalt</b>																				
Refinery	2,122	207	2,329	399	2,674	1,637	5,697	619	593	593	594	138	3,914	2,458	2,086	16,134	52,068	0	0	52,068
Bulk Terminal	2,259	514	2,773	183	1,384	598	304	2,480	0	0	135	120	0	259	0	442	2,934	0	0	2,934
Total	4,381	721	5,102	582	4,058	2,235	1,681	8,147	619	593	729	138	4,049	2,458	2,528	18,068	55,002	0	0	55,002
<b>Road Oil</b>																				
Refinery	0	0	0	0	42	0	4	46	0	0	0	0	0	0	2	0	2	3	33	84
Total	0	0	0	0	42	0	4	46	0	0	0	0	0	0	2	0	2	3	33	84
<b>Miscellaneous Products</b>																				
Refinery	427	40	467	1	19	15	14	132	47	483	198	59	1	748	0	342	1,090	0	0	1,090
Bulk Terminal	134	0	134	0	3	3	3	25	0	0	13	25	0	38	0	20	207	0	0	207
Pipeline	5	26	31	26	0	0	0	35	38	2	0	0	0	0	0	40	0	0	0	108
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	566	66	632	27	129	22	17	185	134	1,781	172	119	1	2,802	2	362	3,382	0	0	3,382
<b>Total Stocks, All Oils</b>	---	---	211,821	---	---	---	---	287,145	---	---	---	---	---	---	---	---	705,981	31,688	173,273	1,383,907

1 Crude oil data are not collected by refinery district.

2 Includes 338,004 thousands of barrels of domestic crude oil.

(g) Less than 500 barrels.

Note: Totals may not equal sum of components due to independent rounding.

Source: U.S. Energy Information Administration, Monthly Energy Review.

--- Not Applicable.



Table 25. Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, July 1962  
(Thousands of Barrels)

Commodity	From I to			From II to			From III to			From IV to			From V to		
	II	III	V	I	III	IV	I	II	IV	V	II	III	V	I	III
<b>Crude Oil</b>	34	0	0	0	0	0	0	422	1,896	0	0	0	0	2,197	14,664
<b>Petroleum Products</b>	8,898	666	83	2,701	5,349	2,346	84,918	25,792	0	3,381	1,223	0	1,139	20	40
Natural Gasoline and Isopentane	0	0	0	0	324	0	0	1,181	0	0	324	0	0	0	0
Unfractionated Steam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Liquid Petroleum Gases	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Unrefined Petroleum Gases	0	24	0	833	1,548	60	1,779	4,187	0	0	0	0	0	0	0
Unrefined Cuts	0	0	0	0	0	0	0	267	631	0	180	0	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	6,061	429	83	972	1,854	1,398	50,678	11,905	0	1,357	514	0	704	0	0
Finished Motor Gasoline	3,449	295	0	441	1,223	0	114	22,899	6,020	0	581	359	0	289	0
Finished Unleaded Motor Gasoline	2,612	292	83	931	641	582	27,979	5,879	0	776	155	0	415	0	0
Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marine-Type Jet Fuel	1,111	0	0	0	0	0	0	195	199	0	0	0	0	0	0
Marine-Type Jet Fuel	1,121	0	0	0	0	0	0	195	199	0	0	0	0	0	0
Kerosene	81	0	0	106	97	644	6,674	1,476	0	287	14	0	50	0	0
Distillate Fuel Oil	2,200	0	0	0	0	0	0	338	155	0	0	0	0	0	0
Distillate Fuel Oil Less No. 4	2,330	0	0	206	656	221	19,781	4,364	0	413	371	0	288	0	0
No. 4 Fuel Oil	0	0	0	0	0	0	0	48	0	0	413	371	0	288	0
Residual Fuel Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residual Fuel Oil	0	38	0	254	715	0	3,090	209	0	924	0	0	0	20	40
Residual Fuel Oil for Petro.	67	153	0	28	63	0	62	33	0	0	0	0	0	0	0
Special Naphthalene	17	20	0	53	21	0	303	164	0	0	0	0	0	0	0
Lubricants	0	0	0	0	0	0	0	0	0	44	0	0	0	0	0
Wax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	0	0	0	161	0	0	483	438	0	0	0	0	0	0	0
Miscellaneous Products	0	4	0	73	0	0	176	138	0	0	0	0	0	0	0
<b>Total All Products</b>	8,942	666	83	2,701	5,349	2,346	85,340	27,598	0	3,381	1,223	0	1,139	2,217	14,694

Notes: Total may not equal sum of components due to independent rounding.  
Sources: See Explanatory Notes on Data Collection and Estimation.

Table 26. Movements of Petroleum Products by Pipeline Between PAD Districts, July 1982  
(Thousands of Barrels)

Commodity	From I to			From II to			From III to			From IV to			From V to		
	II	III	IV	I	II	III	I	II	III	IV	V	VI	I	II	III
Natural Gasoline and Isopentane	0	0	324	0	0	0	0	1,181	0	0	0	324	0	0	0
Pure Isopentane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pure Isobutane	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unleaded Regular Gasoline	0	833	1,548	60	1,814	4,197	0	0	0	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Unleaded Motor Gasoline	4,787	1,864	1,366	41,214	10,779	0	0	0	0	0	0	0	0	0	0
Finished Unleaded Motor Gasoline	2,622	317	1,223	914	18,574	5,529	0	438	514	0	0	704	0	0	0
Gasohol	2,095	464	641	582	22,640	8,250	0	426	155	0	0	286	0	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation-Type Jet Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation-Type Jet Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kerosene	119	83	97	644	4,535	1,202	0	172	10	0	0	92	0	0	0
Distillate Fuel Oil	11	0	0	0	209	135	0	207	4	0	0	55	0	0	0
Distillate Fuel Oil Less No. 4	1,353	169	656	221	15,253	4,036	0	413	371	0	0	288	0	0	0
No. 4 Fuel Oil	1,353	169	656	221	15,253	4,036	0	413	371	0	0	288	0	0	0
Residual Fuel Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6,467	1,039	4,550	2,346	63,004	22,447	0	1,656	1,223	0	0	1,139	0	0	0

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 27. Movements of Crude Oil and Petroleum Products by Tanker and Barge Between PAD Districts, July 1982  
(Thousands of Barrels)

Commodity	From I to			From II to			From III to			From IV to			From V to		
	II	III	V	I	II	III	I	New Eng	Cent Atl	Low Atl	II	V	I	II	III
Crude Oil	34	0	0	0	0	0	422	0	422	0	1,806	0	2,187	14,564	0
Petroleum Products	2,341	660	83	762	736	21,814	1,107	3,366	17,541	3,345	1,725	20	40	0	0
Unleaded Regular Gasoline	0	24	0	0	0	0	165	0	165	0	0	0	0	0	0
Unleaded Motor Gasoline	8	0	0	0	0	0	263	0	263	0	261	180	0	0	0
Finished Motor Gasoline	1,274	429	83	191	0	9,664	251	44	9,369	1,126	468	0	0	0	0
Finished Unleaded Motor Gasoline	0	0	0	0	0	157	37	44	386	101	0	0	0	0	0
Gasohol	127	0	0	0	0	0	380	0	380	0	0	0	0	0	0
Kerosene-Type Jet Fuel	7	0	0	23	0	0	2,121	474	281	1,366	241	74	0	0	0
Kerosene	777	0	0	0	0	0	69	0	69	0	0	0	0	0	0
Distillate Fuel Oil	0	0	0	0	0	0	4,535	285	1,070	3,173	348	0	0	0	0
Distillate Fuel Oil	0	36	0	284	715	3,480	60	582	2,448	259	926	20	40	0	0
Residual Fuel Oil	67	153	0	58	103	0	0	82	0	0	0	0	0	0	0
Special Naphthenes	0	0	0	15	0	305	0	333	182	164	0	0	0	0	0
Waxes	17	20	0	53	21	307	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Products	0	0	0	161	0	483	0	249	234	438	0	0	0	0	0
Total	2,375	695	83	762	736	22,336	1,107	3,688	17,541	5,151	1,725	2,217	14,604	0	0

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 28. Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker and Barge Between PAD Districts, July 1982  
(Thousands of Barrels)

Commodity	P.A.D. District I			P.A.D. District II			P.A.D. District III			P.A.D. District IV			P.A.D. District V		
	Receipts into PAD I	Shipments from PAD I	Net Receipts PAD I	Receipts into PAD II	Shipments from PAD II	Net Receipts PAD II	Receipts into PAD III	Shipments from PAD III	Net Receipts PAD III	Receipts into PAD IV	Shipments from PAD IV	Net Receipts PAD IV	Receipts into PAD V	Shipments from PAD V	Net Receipts PAD V
<b>Crude Oil</b>	2,519	34	2,585	1,640	0	1,640	14,564	2,228	12,336	0	0	0	0	16,761	-16,761
<b>Petroleum Products</b>	87,690	9,557	78,082	25,820	10,266	15,554	6,655	114,071	-108,036	2,346	2,362	-16	4,659	60	4,549
Unrefined Petroleum	0	0	0	1,505	324	1,181	324	0	-467	0	324	-324	0	0	0
Unrefined Stream	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant Condensate	0	0	0	2	0	2	0	0	-2	0	0	0	0	0	0
Liquid Petroleum Gases	2,612	24	2,588	4,187	2,441	1,756	1,572	5,975	-4,404	60	0	60	180	0	180
Unfinished Oil	0	0	0	269	0	269	0	738	-738	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	658	0	658	0	658	-658	0	0	0	0	0	0
Aviation Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Gasoline	51,891	5,571	46,320	18,480	4,220	14,260	2,269	64,140	-61,840	1,368	1,216	152	2,444	0	2,144
Finished Motor Gasoline	23,340	3,485	19,855	9,834	2,278	7,556	2,559	26,526	-24,247	814	648	166	870	0	870
Finished Unleaded Motor Gasoline	28,510	3,088	25,422	8,646	1,754	6,892	1,634	34,834	-33,600	582	579	12	1,274	0	1,274
Gasolines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	185	0	185	159	25	174	0	384	-384	25	0	25	0	0	0
Jet Fuel	663	121	542	130	61	72	61	857	-779	0	102	-102	264	0	264
Jet Fuel	8,338	123	8,215	1,571	87	1,484	87	2,233	-1,150	644	59	585	336	0	336
Kerosene	5	5	0	216	0	211	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	19,987	2,330	17,657	7,095	1,083	6,012	656	24,558	-23,292	221	659	-438	701	0	701
Distillate Fuel Oil, No. 4	19,939	2,330	17,609	7,095	1,083	6,012	656	24,540	-23,884	221	659	-438	701	0	701
No. 4 Fuel Oil	48	0	48	0	0	0	48	0	-48	0	0	0	0	0	0
Residual Fuel Oil	3,264	35	3,233	259	969	-710	791	4,273	-3,482	0	0	0	924	60	864
Naphtas and Other Oil for Petro.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Special Naphtas	110	293	-110	160	91	69	216	115	101	0	0	0	0	0	0
Lubricants	215	0	215	184	15	149	0	0	0	0	0	0	0	0	0
Waxes	490	37	413	365	74	291	41	789	-748	0	0	0	44	0	44
Wax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	644	0	644	438	161	277	0	921	-921	0	0	0	0	0	0
Asphalt and Road Oil	291	4	247	135	75	65	4	316	-312	0	0	0	0	0	0
Metallurgical Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total All Products</b>	90,208	9,591	80,597	37,663	10,266	27,397	20,619	116,319	-95,700	2,346	2,362	-16	4,659	16,821	-12,218

Net Total may not equal sum of components due to independent rounding

Sources: See Explanatory Notes on Data Collection and Estimation

Table 25: Production of No.4 Fuel Oil and Residual Fuel Oil By Sulfur Content, July 1982  
(Thousands of Barrels)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV				United States	
	East Coast	Appalachian	Total	Appalachian chain #2	Ind. Ill. Ky.	Mich. Wis. Mo.	Ohio. Kans. Min.	Total	Texas Gulf Coast	Texas Gulf Coast	No. La. Ark.	New Mexico	PAID Dist. IV	Rocky Mt.	West Coast			
<b>No. 4 Fuel Oil</b>																		
0.00 to 0.20% Sulfur	0	4	4	0	0	0	0	0	20	12	162	-335	72	197	108	32	104	289
0.21 to 0.50% Sulfur	0	2	2	0	0	0	0	0	0	5	181	-14	2	0	174	0	0	176
0.51 to 1.00% Sulfur	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14	32	0	46
1.01 to 2.00% Sulfur	0	2	2	0	0	0	0	0	0	-23	1	0	1	197	176	0	16	185
Grosser Than 2.00% Sulfur	0	0	0	0	14	0	0	14	0	0	0	-341	69	0	-272	0	3	21
<b>Residual Fuel Oil</b>																		
0.00 to 0.20% Sulfur	3,726	213	3,939	74	2,249	462	614	3,399	869	7,024	7,150	500	122	15,445	312	8,912	31,907	
0.21 to 0.50% Sulfur	980	40	1,020	0	0	0	0	0	102	528	21	98	52	785	0	0	1,743	
0.51 to 1.00% Sulfur	871	157	1,028	0	38	0	129	1,55	15	122	38	117	0	292	110	1,359	2,914	
1.01 to 2.00% Sulfur	1,632	0	1,632	74	1,229	0	273	1,578	434	2,995	1,699	199	8	4,435	66	1,354	8,993	
Grosser Than 2.00% Sulfur	437	0	437	0	736	177	173	1,088	102	325	1,272	6	13	1,718	58	5,354	8,962	
<b>Total</b>	<b>437</b>	<b>0</b>	<b>437</b>	<b>0</b>	<b>252</b>	<b>285</b>	<b>45</b>	<b>962</b>	<b>16</b>	<b>3,339</b>	<b>4,120</b>	<b>50</b>	<b>49</b>	<b>8,204</b>	<b>92</b>	<b>650</b>	<b>9,960</b>	

Note: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation

Table 30. Stocks of No. 4 Fuel Oil and Residual Fuel Oil By Sulfur Content, July 1952  
(Thousands of Barrels)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV		United States	
	East Coast	Total	Asphaltic chain #1	Appar. chain #2	Ind. #1, #2	Min. #3	Whic. #4	Keros. #5	Total	Texas Inland	Texas Gulf Coast	La. Coast	No. La. Ave.	New Mexico		Total
<b>No. 4 Fuel Oil - 0.00 to 0.30% Sulfur</b>																
Refinery	0	4	4	0	0	2	0	0	0	2	0	96	33	3	0	132
Bulk Terminal	394	0	394	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	394	4	398	0	2	2	0	0	2	2	0	96	33	4	0	133
<b>No. 4 Fuel Oil - 0.31 to 0.50% Sulfur</b>																
Refinery	0	0	0	0	2	0	0	0	2	18	0	0	0	0	18	3
Bulk Terminal	45	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	45	0	45	0	2	0	0	0	2	18	0	0	0	0	18	3
<b>No. 4 Fuel Oil - 0.51 to 1.00% Sulfur</b>																
Refinery	0	0	0	0	17	0	0	0	17	29	221	0	3	75	328	0
Bulk Terminal	304	0	304	0	164	28	0	192	0	192	0	98	0	0	98	0
Total	304	0	304	0	181	28	0	209	29	221	221	98	3	75	426	0
<b>No. 4 Fuel Oil - 1.01 to 2.00% Sulfur</b>																
Refinery	0	0	0	0	0	0	0	0	0	0	0	0	25	0	34	0
Bulk Terminal	334	0	334	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	334	0	334	0	0	0	0	0	0	0	0	0	25	0	34	0
<b>No. 4 Fuel Oil - Greater Than 2.00% Sulfur</b>																
Refinery	0	0	0	0	7	0	0	7	0	7	0	0	79	98	0	177
Bulk Terminal	66	2	68	10	1	0	0	11	0	11	0	0	0	0	0	0
Total	66	2	68	10	8	0	0	18	0	18	0	0	79	98	0	177
<b>Residual Fuel Oil - 0.00 to 0.30% Sulfur</b>																
Refinery	306	306	0	0	0	0	0	0	0	88	174	27	23	13	335	115
Bulk Terminal	2,996	0	2,996	0	23	0	0	23	0	6	2,036	29	0	2,061	0	13
Total	3,302	30	3,332	0	23	0	0	23	88	180	2,063	52	13	2,356	115	795
<b>Residual Fuel Oil - 0.31 to 0.50% Sulfur</b>																
Refinery	557	29	586	0	113	3	8	134	3	53	24	109	0	189	29	1,274
Bulk Terminal	1,260	0	1,260	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,817	29	1,846	0	113	3	8	134	3	53	24	109	0	189	29	1,274
<b>Residual Fuel Oil - 0.51 to 1.00% Sulfur</b>																
Refinery	1,428	0	1,428	109	1,029	0	223	1,271	239	1,715	1,645	113	6	3,718	13	589
Bulk Terminal	4,853	48	4,901	103	408	12	91	704	29	593	280	0	0	862	0	201
Total	6,281	48	6,329	312	1,437	12	314	2,075	268	2,308	1,925	113	6	4,580	13	790
<b>Residual Fuel Oil - 1.01 to 2.00% Sulfur</b>																
Refinery	872	49	921	0	840	307	260	1,627	32	588	578	10	1	1,210	84	4,132
Bulk Terminal	2,751	229	2,980	23	395	14	55	469	32	130	664	0	0	803	0	1,370
Total	3,623	278	3,901	23	1,195	391	706	2,096	64	718	1,242	10	1	2,013	84	5,502
<b>Residual Fuel Oil - Greater Than 2.00% Sulfur</b>																
Refinery	185	0	185	0	598	193	34	793	13	2,596	1,956	91	40	4,056	244	495
Bulk Terminal	10,475	26	10,475	0	113	59	190	302	0	1,076	1,502	46	0	2,624	0	369
Total	10,660	26	10,686	0	679	252	224	1,125	13	3,672	3,458	137	40	7,230	244	865
<b>Residual Fuel Oil - Sulfur Content Not Specified</b>																
Petroleum	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	15
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	15

Notes: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 31. Imports of Residual Fuel Oil by Sulfur Content by Country of Origin, July 1982  
(Thousands of Barrels)

Country	Residual Fuel Oil					Total
	0.00 to 0.30%	0.31 to 0.50%	0.51 to 1.00%	Greater Than 2.00%	Not Specified	
<b>Arab OPEC</b>						
Algeria	1,034	0	0	0	0	1,034
Iran	0	0	0	0	0	0
Iraq	533	0	0	0	0	533
Qatar	0	0	0	0	0	0
Saudi Arabia	0	0	0	635	0	635
United Arab Emirates	0	0	0	0	0	0
Subtotal Arab OPEC	1,567	0	0	635	0	2,201
<b>Other OPEC</b>						
Equator	0	0	0	0	0	0
Libya	0	0	0	0	0	0
Nigeria	0	151	0	0	0	151
Iran	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0
Venezuela	1,471	225	199	418	2,458	4,811
Subtotal Other OPEC	1,471	375	199	445	2,458	4,889
<b>Other</b>						
Algeria	0	0	0	0	0	0
Australia	0	0	0	0	0	0
Bahamas	105	0	0	0	0	105
Bolivia	0	0	0	635	0	635
Brazil	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Chad	0	0	0	0	0	0
China	0	0	0	0	0	0
France	0	0	0	0	0	0
Germany	0	0	0	0	0	0
Ghana	0	0	0	0	0	0
India	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0
Japan	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0
Mexico	0	0	0	0	0	0
Netherlands	0	0	0	0	0	0
Norway	0	0	0	0	0	0
Norwegian Arctic	0	0	0	0	0	0
People's Republic of China	0	0	0	0	0	0
Peru	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0
Romania	0	0	0	0	0	0
Spain	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0
Tanzania	0	0	0	0	0	0
Thailand	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0
Yugoslavia	0	0	0	0	0	0
Zaire	0	0	0	0	0	0
<b>Other Western Hemisphere</b>						
Other Western Hemisphere	0	369	195	0	0	564
Other Eastern Hemisphere	2	28	367	65	164	626
Subtotal Other	567	417	3,416	1,789	4,524	10,552
<b>Total Imports</b>	<b>3,544</b>	<b>792</b>	<b>3,914</b>	<b>2,225</b>	<b>7,657</b>	<b>17,943</b>

(A) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 32. Imports of Residual Fuel Oil by Sulfur Content by State of Entry, July 1982  
(Thousands of Barrels)

State	Residual Fuel Oil				
	0.00 to 0.30%	0.31 to 0.50%	0.51 to 1.00%	Greater Than 2.00%	Total
<b>PAD District I</b>	1,934	614	2,767	2,693	8,008
Florida	0	0	863	1,024	1,887
Illinois	0	0	0	813	813
Indiana	0	0	259	303	562
Maryland	0	0	172	0	172
Massachusetts	0	0	1,159	0	1,159
Michigan	380	84	109	86	659
New Jersey	1,269	530	701	926	3,426
New York	0	0	0	94	94
North Carolina	0	0	503	0	503
Pennsylvania	0	0	0	0	0
Rhode Island	0	0	0	150	150
South Carolina	0	0	0	50	50
Virginia	0	0	269	30	300
<b>PAD District II</b>	0	0	282	29	311
Michigan	0	0	212	0	212
North Dakota	0	0	0	29	29
Ohio	0	0	70	0	70
<b>PAD District III</b>	1,608	0	968	0	2,576
Louisiana	1,279	0	169	0	1,448
Texas	329	0	799	0	1,128
<b>PAD District IV</b>	0	0	0	0	0
<b>PAD District V</b>	2	178	0	163	343
Hawaii	2	178	0	163	343
Washington	0	0	0	0	0
<b>All PAD Districts</b>	3,544	792	3,614	2,235	10,185

Note: Total may not equal sum of components due to independent rounding.  
Source: Staff Explanatory Notes on Data Collection and Estimation.







**Alcohol.** The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group,  $\text{CH}_3(\text{CH}_2)_n\text{OH}$ . "Alcohol" includes ethanol and methanol.

**Asphalt.** A dark-brown-to-black cement-like material, containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. The conversion factor is 5.5 42-gallon barrels per short ton.

**ASTM.** The acronym for the American Society for Testing and Materials.

**Aviation Gasoline Blending Components.** Finished components in the gasoline range which will be used for blending or compounding into finished aviation gasoline.

**Aviation Gasoline (Finished).** All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D 910 and Military Specification MIL-G-5572.

**Barrel.** A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. This measure is used in most statistical reports. Factors for converting petroleum coke, asphalt, and wax to barrels are given in the definitions for these products.

**Butane.** A normally gaseous paraffinic hydrocarbon,  $\text{C}_4\text{H}_{10}$ . It is extracted from natural gas or refinery gas streams. Butane is covered by ASTM Specification D1835 and Gas Processors Association Specification for commercial butane.

- **Normal Butane**—A saturated straight-chain hydrocarbon of butane. It is a colorless paraffinic gas that boils at a temperature of  $31.1^\circ\text{F}$ . This classification includes mixtures of gases that contain 80 percent or more normal butane.

- **Other Butanes**—All butanes not included as normal butane or isobutane.

**Butane-Propane Mixtures.** Mixtures consisting exclusively of butane and propane that conform to ASTM Specification D1835 and Gas Processors Association Specification for commercial butane-propane. They are extracted from natural gas and refinery gas streams.

**Butylene.** An olefinic hydrocarbon,  $\text{C}_4\text{H}_8$ , recovered from refinery processes. It is reported in the "Butane" category.

**Coal.** A generic term applied to carbonaceous rocks that were formed by the partial or complete decomposition of vegetation. These stratified carbonaceous rocks are either solid or brittle and are highly combustible. Includes lignite, bituminous coal, and anthracite which conform to ASTM Specification D 388.

**Crude Oil (including Lease Condensate).** A mixture of hydrocarbons that existed in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Lease condensate is included. Drips are also included, but topped crude (residual) oil and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable. Crude oil is considered as either domestic or foreign, according to the following:

- **Domestic**—Crude oil produced in the United States or from its outer continental shelf as defined in 43 U.S.C. 1331. Hydrocarbons such as shale oil and tar sand oil are included.

- **Foreign**—Crude oil produced outside the United States. Imported Athabasca hydrocarbons are included.

**Distillate Fuel Oil.** A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation. Included are products known as No. 1 and No. 2 heating oils, No. 1 and No. 2 diesel fuel oils, and No. 4 fuel oil.

- **No. 1 Fuel Oil**—A light distillate fuel oil intended for vaporizing pot-type burners. ASTM Specification D 396 specifies for this grade maximum distillation temperatures of 400° F. at the 10-percent point and 550° F. at the 90-percent point, and kinematic viscosities between 1.4 and 2.2 centistokes at 100° F.

- **No. 2 Fuel Oil**—A distillate fuel oil for domestic heating for use in atomizing-type burners or for moderate capacity commercial-industrial burner units. ASTM Specification D 396 specifies for this grade temperatures at the 90-percent point between 540° and 640° F., and kinematic viscosities between 2.0 and 3.6 centistokes at 100° F.

- **No. 1 and No. 2 Diesel Fuel Oils**—Distillate fuel oils used in compression-ignition engines, as given by ASTM Specification D 975:

1. **No. 1-D**—A volatile distillate fuel oil in the 400° to 550° F. boiling range for engines in service requiring frequent speed and load changes. Type C-B diesel fuel, which is used for city buses and similar operations, is included.

2. **No. 2-D**—A distillate fuel oil of lower volatility in the 540° to 640° F. boiling range for engines in industrial and heavy mobile service. Type R-R diesel fuel for railroad compression-ignition engines and Type T-T for diesel-engine trucks are included.

- **No. 4 Fuel Oil**—A fuel oil for commercial burner installations not equipped with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D 396 or Federal Specification VV-F-815C; its kinematic viscosity is between 5.8 and 26.4 centistokes at 100° F. Also included is No. 4-D, a fuel oil for low- and medium-speed diesel engines that conforms to ASTM Specification D 975.

**Eastern Hemisphere.** That half of the earth east of the Atlantic Ocean which includes Europe, Asia, Africa, and Australia. The Hawaiian Foreign Trade Zone is in this hemisphere.

**Electric Energy (Purchased).** Electricity purchased for refinery operations that is not produced within the refinery complex.

**Ethane.** A normally gaseous paraffinic hydrocarbon,  $C_2H_6$ , extracted from natural gas and refinery gas streams. "Ethane" includes any product containing 90 percent liquid volume or more ethane.

**Ethane-Propane Mixtures.** Mixtures of ethane and propane in which neither component is 90 percent or more of the liquid volume. It is extracted for natural gas and refinery gas streams.

**Ethylene.** An olefinic hydrocarbon,  $C_2H_4$ , recovered from refinery and petrochemical processes. It is reported in the "Ethane" category.

**Fleld Production.** Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, and new supply of other hydrocarbons and alcohol.

**Gas Well Gas.** Natural gas produced from gas wells. Such gas may be either associated gas or non-associated gas.

- **Associated Gas**—Free natural gas in immediate contact, but not in solution, with crude oil in the reservoir.

- **Non-Associated Gas**—Free natural gas not in contact with, nor dissolved in, crude oil in the reservoir.

**Imported Crude Oil Burned as Fuel.** The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. "Imported crude oil burned as fuel" includes lease condensate and liquid hydrocarbons produced from tar sand oil, gilsonite, and oil shale.

**Isobutane.** A saturated branch-chain isomer of butane. It is a colorless paraffinic gas that boils at a temperature of 10.9° F. This classification includes mixtures of gases that contain 80 percent liquid volume or more isobutane. It is extracted from natural gas and refinery gas streams.

**Isopentane.** A saturated branch-chain hydrocarbon,  $C_5H_{12}$ , obtained by fractionation of natural gasoline or isomerization of normal pentane.

**Kerosene.** A petroleum distillate that boils at a temperature between 300° and 550° F., that has a flash point higher than 100° F. by ASTM Method D 56, that has a gravity range from 40° to 46° API, and that has a burning point in the range of 150° to 175° F. It is a clean-burning product suitable for use as an illuminant when burned in wick lamps. Includes grades of kerosene called range oil having properties similar to No. 1 fuel oil, but with a gravity of about 43° API and having a maximum end-point of 625° F. Kerosene is used in space heaters, cook stoves, and water heaters.

**Kerosene-Type Jet Fuel.** A quality kerosene product with an average gravity of 40.7° API, a 10-percent distillation temperature of 400° F., and an end-point of 572° F. It is covered by ASTM Specification D 1655 and Military Specification MIL-T-6824L (Grade JP-5 and JP-8). It is used primarily for commercial turbojet and turboprop aircraft engines.

**Lease Condensate.** A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

**Lease Separator.** A surface facility used for separating casinghead gas from produced crude oil and water and separating gas from that portion of associated gas and non-associated gas that liquefies at the temperature and pressure conditions of the separator.

**Liquefied Petroleum Gases (LPG).** Propane, propylene, butanes, butylene, ethane-propane mixtures, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids. Formerly called "Liquefied Gases."

**Liquefied Refinery Gases (LRG).** Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration they are retained in the liquid state. The reported categories are ethane and/or ethylene, propane and/or propylene, butane and/or butylene, butane-propane mixtures, and isobutane. Excludes still gases used for chemical or rubber manufacture which are reported as petrochemical feedstocks and also excludes liquefied gases ready for blending into gasoline which are reported as gasoline blending components. Liquefied refinery gases are reported for use as petrochemical feedstocks, other uses, or both.

**Lubricants.** A substance used to reduce friction between bearing surfaces. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. "Lubricants" includes all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. The three categories reported are:

- **Bright Stock**—A refined, high viscosity lubricating oil base stock that is usually made from a residuum by a treatment such as deasphalting, acid treatment, or solvent extraction.
- **Neutral**—A distillate lubricating oil base stock with a viscosity that is usually not above 550 Saybolt Universal Seconds (SUS) at 100° F. It is prepared by a treatment such as hydrofining, acid treatment, or solvent extraction.
- **Other**—A lubricating oil base stock used in finished lubricating oils and greases, including black, constal, and red oils.

**Miscellaneous Products.** Includes all finished products not classified elsewhere. "Miscellaneous products" includes petrolatum, absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and other finished products.

**Motor Gasoline Blending Components.** Finished components in the gasoline range that will be used for blending or compounding into finished motor gasoline. Pool gasoline is included in this category.

**Motor Gasoline (Finished).** A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition

engines. Specifications for motor gasoline, as given in ASTM Specification D 439 or Federal Specification VV-G-1690B, include a boiling range of 122° to 158° F. at the 10-percent point to 365° to 374° F. at the 90-percent point and a Reid vapor pressure range from 9 to 15 psi. "Motor gasoline" includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

- **Finished Leaded Gasoline**—Contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. The actual lead content of any given gallon, however, may vary as a function of the size of the producer and company according to specific Environmental Protection Agency waiver provisions. Premium and regular grades are included, depending on the octane rating.
- **Finished Unleaded Gasoline**—Contains up to 0.05 grams of lead per gallon and 0.005 grams of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating.
- **Gasohol**—A blend of alcohol and finished motor gasoline that is no more than 90 percent of finished motor gasoline (leaded or unleaded as described above) and no less than 10 percent or more alcohol (ethanol or methanol).

**Motor Gasoline (Total).** Includes finished leaded motor gasoline, finished unleaded motor gasoline, motor gasoline blending components, and gasohol.

**Naphtha-Type Jet Fuel.** A fuel in the heavy naphtha boiling range with an average gravity of 52.8° API and 20 to 90 percent distillation temperatures of 290° to 470° F., meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop aircraft engines, primarily by the military. This category excludes ram-jet and petroleum rocket fuels, which are included in the "Miscellaneous Products" category.

**Natural Gas.** A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

**Natural Gas Field Facility.** A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, butane, natural gasoline, etc., and to control the quality of natural gas to be marketed.

**Natural Gas Plant Liquids.** Natural gas liquids recovered from natural gas in gas processing plants, and in some situations, from natural gas field facilities. Natural gas liquids extracted by fractionators are also included. These liquids are defined according to the published specifications of the Gas Processors Association and the American Society for Testing and Materials, and are classified as follows: Ethane, propane, ethane-propane mix, isobutane, butane, butane-propane mix, isopentane, natural gasoline, plant condensate, unfractionated stream, and other products from natural gas processing plants (i.e., products meeting the standards of finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

**Natural Gas Processing Plant.** A facility designed to recover natural gas liquids from a stream of natural gas that may or may not have been processed through lease separators or natural gas field facilities. The facility also controls the quality of natural gas to be marketed. Cycling plants are classified as gas processing plants.

**Natural Gasoline.** A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the C Producers Association.

**OPEC.** The acronym for the Organization of Petroleum Exporting Countries, oil-producing and exporting countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.

**Operable Distillation Capacity.** The maximum amount of input that can be processed by a crude distillation unit in a 24-hour period, making allowances for processing limitations due to type

grades of inputs, limitations of downstream facilities, scheduled and unscheduled downtimes, and environmental constraints. Includes any shutdown capacity that could be placed in operation within 30 days.

**Other Hydrocarbons.** Materials received by a refinery and consumed as raw materials. Included hydrogen, coal, tar derivatives, gilsonite, and natural gas received by the refinery for reforming to produce hydrogen. Natural gas to be used as fuel is excluded.

**Petrochemical Feedstocks.** Chemical feedstocks derived from petroleum, principally for the manufacture of synthetic rubber and a variety of plastics. The categories reported are "Naphtha-less than 400° F. end-point" and "Other oils over 400° F. end-point."

- **Naphtha less than 400° F. end-point**—A naphtha with an end point of less than 400° F. and that is reported as used as a petrochemical feedstock.
- **Other oils over 400° F. end-point**—Oils with an end point over 400° F. and that are reported as used as a petrochemical feedstock.

**Petroleum Coke.** A residue, the final product of the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5.42-gallon barrels per short ton.

- **Marketable Coke**—Those grades of coke that are produced in delayed or fluid cokers and which may be recovered as relatively pure carbon. This "green" coke may be sold or further purified by calcining.
- **Catalyst Coke**—In many catalytic operations (i.e., catalytic cracking) carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as fuel in the refinery process. This carbon or coke is not recoverable in its concentrated form.

**Petroleum Products.** Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, natural gasoline and isopentane, plant condensate, unfractionated stream, ethane, liquefied petroleum gases, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400° F. end-point, other oils over 400° F. end-point, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

**Petroleum Refinery.** An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas plant liquids, other hydrocarbons, and alcohol.

**Plant Condensate.** One of the natural gas plant liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

**Primary Stocks.** Stocks of crude oil or petroleum products held in storage at (or in) leases, refinery, natural gas processing plants, pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in transit from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. "Primary Stocks" excludes stocks of foreign origin that are held in bond warehouse storage.

**Propane.** A normally gaseous hydrocarbon,  $C_3H_8$ , extracted from natural gas and refinery gas streams. It is used primarily as a fuel and as a petrochemical feedstock. Propane is covered by API Specification D1836, Gas Processors Association for commercial and HD-5 propane, and API Specification for special duty propane.

**Propylene.** An olefinic hydrocarbon,  $C_3H_6$ , recovered from refinery and petrochemical processes. It is reported in the "Propane" category.

**Residual Fuel Oil.** Topped crude of refinery operations. "Residual Fuel Oil" includes No. 5 and No. 6 fuel oils as defined in ASTM Specification D 396 and Federal Specification VV-F-815C; Navy Specification 280 as defined in Military Specification MIL-F-859E including Amendment 2; Bunker C fuel oil as defined in Military Specification MIL-F-859E including Amendment 2; Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. Imports of residual fuel oil include "Imported Crude Oil Burned as Fuel Oil."

**Road Oil.** Any heavy petroleum oil, including residual naphthalic oils, used as a dust palliative and surface treatment of roads and highways. It is generally produced in six grades; from 0, the most liquid, to 5, the most viscous.

**Special Naphthas.** All finished products within the gasoline range that are used as paint thinners, cleaners, and solvents. These products are refined to a specified flash point and have a boiling range of 90° to 220° F. "Special naphthas" includes all commercial hexane and cleaning solvents conforming to ASTM Specifications D1836 and D 484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

**Steam (Purchased).** Steam that is purchased for use by a refinery that was not generated from within the refinery complex.

**Still Gas (Refinery Gas).** Any form or mixture of gas produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, butane, butylene, propane, propylene, etc. Still gas is reported for petrochemical feedstock use and refinery fuel use.

- **Petrochemical Feedstock Use**—Includes all refinery streams which are used by chemical or rubber manufacturing operations for further processing, less the amount of such streams returned to the source refinery. Finished petrochemical products are not included. For example, polyethylene, butadiene, etc. are considered petrochemical products; therefore, only their feedstock equivalents are included.

- **Fuel Use**—All other still gas.

**Strategic Petroleum Reserve (SPR).** Stocks (currently, only crude oil) maintained by the Federal Government for use during periods of major supply interruption.

**Unfinished Oils.** Includes all oils requiring further processing, except those requiring only mechanical blending.

**Unfractionated Stream.** Mixtures of unsegregated natural gas plant liquid components excluding those included in plant condensate. This product is extracted from natural gas.

**Wax.** A solid or semi-solid material derived from petroleum distillates or residues by such treatment as chilling, precipitating with a solvent, or de-oiling. It is a light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. The three grades reported are microcrystalline, crystalline—fully refined, and crystalline—other. The conversion factor is 280 pounds per 42-gallon barrel.

- **Microcrystalline Wax**—Wax extracted from certain petroleum residues having a finer and less apparent crystalline structure than paraffin wax and having the following physical characteristics:

- Penetration at 77° F. (D-1821)—60 maximum.
  - Viscosity at 210° F. in Saybolt Universal Seconds (SUS) (D-88)—60 SUS (10.22 centistokes) minimum to 160 SUS (31.8 centistokes) maximum.
  - Oil content (D-721)—5 percent minimum.

- **Crystalline-Fully Refined Wax**—A light-colored paraffin wax having the following characteristics:

- Viscosity at 210° F. (D-88)—59.9 SUS (10.18 centistokes) maximum.
  - Oil Content (D-721)—0.5 percent maximum.
  - Other +20 color, Saybolt minimum.

- **Crystalline-Other Wax**—A paraffin wax having the following characteristics:

- Viscosity at 210° F. (D-88)—59.9 SUS (10.18 centistokes) maximum.
  - Oil Content (D-721)—0.51 percent minimum to 15 percent maximum.

**Western Hemisphere.** That half of the earth that includes North and South America and the surrounding waters.

# Bureau of Mines Petroleum Refining Districts and PAD Districts

## PAD District

## Refining District

### I

**East Coast**—District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung and all counties east and north thereof. Also the following counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.

**Appalachian #1**—The State of West Virginia, those parts of the States of Pennsylvania and New York not included in the East Coast District.

**Appalachian #2**—The following counties of the State of Ohio: Erie, Huron, Crawford, Marion, Delaware, Franklin, Pickaway, Ross, Pike, Scioto, and all counties east thereof.

### II

**Indiana—Illinois—Kentucky**—The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and that part of the State of Ohio not included in the Appalachian District.

**Minnesota—Wisconsin—North and South Dakota**—The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

**Oklahoma—Kansas—Missouri**—The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

**Texas Inland**—The State of Texas except the Texas Gulf Coast District.

**Texas Gulf Coast**—The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

### III

**Louisiana Gulf Coast**—The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, Tangipahoa, Washington, and all Parishes south thereof. Also the following counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following counties of the State of Alabama: Mobile and Baldwin.

**North Louisiana—Arkansas**—The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

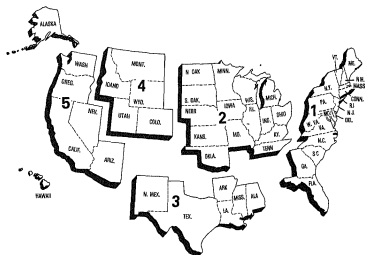
**New Mexico**—The State of New Mexico.

**Rocky Mountain**—The States of Montana, Idaho, Wyoming, Utah, and Colorado.

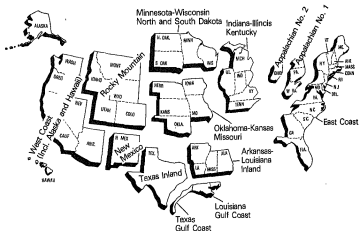
**West Coast**—The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.



## Petroleum Administration for Defense (PAD) Districts

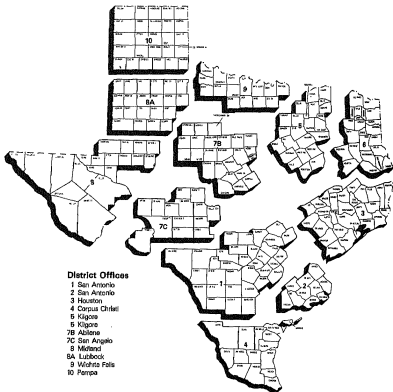


## Bureau of Mines Refining Districts

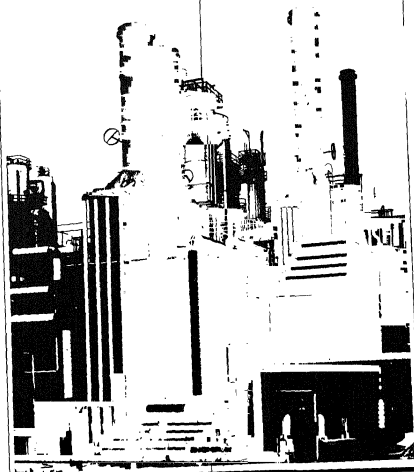


## District Map Oil and Gas Division Railroad Commission of Texas

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## Explanatory Notes



# Explanatory Notes

## Note 1.1 EIA-64: Natural Gas Liquids Operations Report

### Background

The EIA-64, "Natural Gas Liquids Operations Report" evolved from a survey designed and conducted by the United States Geological Survey beginning in 1911. This form collects data on the production and storage of natural gas plant liquids at natural gas processing plants and fractionators.

### Description of Survey

#### Universe

The universe includes all operators of facilities designed to: (1) extract liquid hydrocarbons from natural gas streams (natural gas processing plants); (2) separate a combined products liquid hydrocarbon stream into its component products, i.e. propane, butane, natural gasoline, etc. (fractionators); or (3) store the liquid hydrocarbon output of plants and fractionators.

The mailing list is automated. It is maintained by matching periodically with the *LP Gas Almanac* listings (including supplements) and the *Oil and Gas Journal* Processing Plant Survey listings, and by making changes reported by the respondents.

#### Information Collected

The data are submitted monthly by facility and include all products that the company controls through possession, regardless of ownership. The main items of information collected by the EIA-64 are shown by the example of the form presented below.

#### Collection Methods

Completed reports are required to be postmarked 20 days following the last day of the report month. Follow-up telephone calls are made to nonrespondents in order to collect data before publication of the aggregated data.

#### Imputing Missing Data

Imputation is performed only for companies that submitted a report in the previous month. For such companies, previous monthly values are used for current values. The previous month's ending stock value is used for both the current month's beginning stocks and the current month's ending stocks. The value of shipments is adjusted to balance stock level, production, receipts, plant fuel use, and losses. In the event that the previous month's data were estimated, the respondent is contacted and requested to submit estimates, if necessary, to be followed by a resubmission of actual data.

#### Response Rates

The initial response rate averages 85 percent, with a final response averaging 98 percent as a result of telephone follow-up procedures.

#### Data Processing

ved for identification section omissions, duplicate submissions, and  
The data are then entered and edited. The edit program includes  
es, range checks for current-month to previous-month changes  
calculation errors, line balancing errors, etc. Telephone calls are  
itions.

## 89 and 90: Joint Petroleum Reporting

item (JPRS) comprises four surveys: the "Refinery Report" (EIA-  
port" (EIA-88); the "Pipeline Products Report" (EIA-89); and the

U.S. Department of Energy  
Energy Information Administration  
Mail Station: BG-206 Post  
Washington, D.C. 20585

### Natural Gas Liquids Operations Report

This Report is Mandatory Under Public Law 50-275. Failure to Comply may Result in Criminal Fines, Civil Penalties and Other Sanctions as Provided in Law.

Responsible: V. J. J. J.


Support Data Layer Day at

Reporting Month:

Form Approved  
OMB No. 1545-0047

1000

from 1995 to 2000

1

Page Number

## Section 1. Natural Gas Processing Plant and Fractionator Operations (Batch of 47 Gallons)

[illegible]

"Crude Oil Stocks Report" (EIA-90). This group of forms collects data on petroleum refinery operations and on storage of crude oil and petroleum products. The origins of JPRS lie in the voluntary petroleum reporting systems instituted by the Bureau of Mines (BOM) soon after it was established as a part of the Department of the Interior in May 1910.

## Description of Survey

### Universe

The respondent universe of each JPRS survey is defined as follows:

EIA-87: All petroleum refineries and plants producing finished motor gasoline through mechanical blending of liquids which are operated or controlled in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Hawaiian Foreign Trade Zone, and Guam.

EIA-88: All bulk terminal facilities in the 50 States and the District of Columbia, Puerto Rico, the Virgin Islands that (a) have total bulk storage capacity of 50,000 barrels or more and/or (b) reprocess petroleum products by tanker, barge, or pipeline regardless of ownership of the material.

EIA-89: All products pipeline companies that carry petroleum products (including interstate and intracompany pipelines) in the 50 States and the District of Columbia.

EIA-90: Crude oil pipeline companies (gathering and trunk pipeline companies), crude oil production terminal operators, storers of crude oil, and companies transporting Alaskan crude oil by water (in excess of 1,000 barrels), regardless of ownership in the 50 States and the District of Columbia.

The list of respondents is kept current by checking for new respondents in the *Oil and Gas Journal* weekly magazine; newspaper articles; the Office of Resource Applications publication "Trends in Refinery Capacity & Utilization," the Office of Refinery Operations (ERA) list of U.S. Refiners; an annual survey EIA-177 "Capacity of Petroleum Refineries."

### Information Collected

The main items of information collected by EIA-87, are shown by the example presented below. EIA-88 and EIA-89 collect data on petroleum product stocks. The EIA-90 collects data on crude oil stocks and crude oil used directly as fuel.

### Collection Methods

The data for the JPRS surveys are collected on a monthly basis. Completed forms are required postmarked by the 20th day following the report month. Telephone follow-up calls are made to nonrespondents in order to collect data before publication deadline. An automated mailing list is maintained and is used to monitor receipt of the forms.

### Imputing Missing Data

Imputation is performed only for companies that submitted a report in the previous month. For companies, the previous monthly values are used for current values. The previous month's ending stock value is used for both the current month's beginning stocks and the current month's ending stocks. The value of shipments is adjusted to balance stock level, production receipts, and losses. In the event previous month's data were estimated, the respondent is contacted and requested to submit estimates, if necessary, to be followed by a resubmission of actual data.

### Response Rates

As of the filing deadline, the response rate of the JPRS respondents is over 90 percent. All companies that have not responded are contacted by telephone. Although data are taken by telephone to expedite processing, a certified submission is still required. Thirty calendar days after the report month, data from companies that still fail to file the form are estimated based on prior month's data. Names of companies that fail to file for two consecutive months are forwarded to DOE for further noncompliance action. Final response rate is 100 percent.

Report Type **B-1** EIA Company Identification No.               Report Period:                    
Yr. Mo.**SECTION 8. REFINERY STOCKS, RECEIPTS, INPUTS, PRODUCTION, SHIPMENTS AND REFINERY FUEL USE AND LOSSES**  
(Thousands of Barrels of Oil at 42 Degrees)

ITEM DESCRIPTION	PRO- DUCT CODE	OTHER RECEIPTS IN MONTH	RECEIPTS FROM OTHER SOURCES	INVENTORY IN MONTH	PRODUCTION IN MONTH	SHIPMENTS TO OTHERS IN MONTH	RECEIPTS FROM OTHERS IN MONTH	RECEIPTS FROM OTHERS IN MONTH	RECEIPTS FROM OTHERS IN MONTH
Crude oil (incl. heavy and medium)	080				X				
Total sum of items 080 and 082	080				X				
Domestic feedstock	082				X				
Foreign	082				X				
Residue	082				X				
Production of refined gas (incl. plants)	110				X				
Propane	223				X				
Ethene propene mixture	241				X				
Isobutane	223				X				
Normal butane	226				X				
Other butanes	226				X				
Other propylene mixtures	224				X				
Normal gasoline and kerosene	228				X				
Other gasoline	219				X				
Unfractionated kerosene	227				X				
Other hydrocarbons and hydrogen	080				X				
Alcohol	091				X				
Unfractionated oil	010								
Gasoline									
Fuel oil (incl. engine)	132								
Fuel oil (incl. motor)	132								
Blending components, motor	134								
Gasoline	136								
Fuel oil (incl. engine)	111								
Blending components, motor	112								
General kerosene feedstock	080								
Jet fuel									
Jet fuel type	211								
Kerosene type	213								
Kerosene (incl. engine oil)	211								
Distillate fuel oil, low nap. 4	412								
No. 4 fuel oil	414								
Residual fuel oil	011								
Unfractionated oil									
Fuel oil	012								
Fuel oil	018								
Fuel oil	018								
Fuel oil	018								
Wax									
Microcrystalline	061								
Crystalline (incl. solvent)	011								
Crystalline (incl. solvent)	061								
Paraffinic oils									
Marketable	021								
Catalytic	022								
Fuel oil	021								
Fuel oil									
Fuel oil (incl. engine)	042								
Fuel oil	044								
Ethene (incl. ethylene)									
Paraffinic feedstock use	012								
Other use	082								
Propane and propylene									
Paraffinic feedstock use	013								
Other use	083								
Isobutane and butylene									
Paraffinic feedstock use	014								
Other use	084								
Normal gasoline and kerosene									
Paraffinic feedstock use	016								
Other use	086								
Isobutane and propylene									
Paraffinic feedstock use	015								
Other use	085								
Isobutane and propylene									
Paraffinic feedstock use	014								
Other use	084								
Isobutane and propylene									
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Paraffinic feedstock use	014								
Other use	084								

## Note 1.3 EIA-161, 162, 163, 164 and 165: Weekly Petroleum Reporting System

### Background

The Weekly Petroleum Reporting System (WPRS) comprises five surveys: the "Refinery Report" (EIA-161); the "Bulk Terminal Stocks Report" (EIA-162); the "Pipeline Product Stock Report" (EIA-163); the "Crude Oil Stocks Report" (EIA-164); and the "Imports Report" (EIA-165).

The EIA weekly reporting system was designed to collect data similar to those collected under the monthly Joint Petroleum Reporting System (JPRS) (See Note 1.2). In the WPRS, selected petroleum companies report weekly data to EIA on crude oil and petroleum product stocks, refinery inputs and production, and crude oil and petroleum product imports. On the Forms EIA-161 through EIA-164, companies report data on a custody basis. On the Form EIA-165, the importer of record reports each shipment entering the United States. Current weekly data and the most recent monthly data from the JPRS are used to estimate the published weekly totals.

### Description of Survey

#### Universe

The sample of companies that report weekly in the WPRS was selected from the universe of companies that report monthly in either the JPRS system or the ERA-60 system (for imports). All sampled companies report data only for facilities in the 50 States and the District of Columbia.

The sampling frame for each weekly survey is defined as follows:

**EIA-161:** Uses the EIA-87 universe, which includes all petroleum refineries in the United States and its territories, industrial facilities that have crude oil distillation capacity and produce some refined petroleum products, and bulk terminals that blend motor gasoline.

**EIA-162:** Uses the EIA-88 universe, which includes all bulk terminal facilities in the United States and its territories that have total bulk storage capacity of 50,000 barrels or more, or that receive petroleum products by tanker, barge, or pipeline.

**EIA-163:** Based on the EIA-89 universe, which includes all petroleum product pipeline companies in the United States and its territories that transport refined petroleum products, including interstate, intrastate and intracompany pipeline movements. Pipeline companies that only transport natural gas liquids are not included in the EIA-163 frame. Only those pipeline companies which transport products covered in the weekly survey are included.

**EIA-164:** Uses the EIA-90 universe, which consists of all trunk pipeline companies in the United States and its territories which transport crude oil, all refining companies, all crude oil producers, all terminal operators, and all storers of 1,000 barrels or more of crude oil.

**EIA-165:** Uses the ERA-60 universe, which includes all importers of record of crude oil and petroleum products into the United States and Puerto Rico.

#### Sampling

The sampling procedure used for the weekly system is the cut-off method. In the cut-off method, companies are ranked from largest to smallest on the basis of the quantities reported during some previous period. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers about 90 percent of the total for the previous time period.

#### Collection Methods

Data are collected by mail, mailgram, telephone, Telex, and Telefax on a weekly basis. All canvassed firms and terminal operating companies must file by 6:00 p.m. on the Monday following the close of the report period, 7 a.m. Friday. During the processing week, company corrections of the prior week's data are also entered.



## Formula and Calculations

After the company reports have been checked and entered into the weekly data base, ratio estimates of the weekly totals are calculated from the reported data.

First, the current week's data for a given product reported by companies in that region are summed. (Call this weekly sum,  $W_i$ .) Next, the most recent month's data for the product reported by those same companies are summed. (Call this monthly sum,  $M_i$ .) Finally, let  $M_s$  be the sum of the most recent month's data for the product as reported by *all* companies. Then, the current week's ratio estimate for that product for all companies is given by.

$$W_i = \frac{M_i}{M_s} \cdot W_s$$

This procedure is used directly to estimate total weekly inputs to refineries and production.

To estimate stocks of finished products, the preceding procedure is followed separately for refineries, bulk terminals, and pipelines. Total estimates are formed by summing over establishment types.

Weekly imports data are highly variable on a company-by-company basis or a week-by-week basis. Under such conditions, the ratio method is known to result in large errors. Hence, a number of other procedures for estimating weekly imports were considered. The average ratio method was selected for estimating imports because it produces estimates that were close to benchmark values computed from monthly data. Estimates are obtained using the ratio method, but with each company in turn omitted from the sample. These estimates are then averaged to obtain the average ratio estimate.

## Imputing Missing Data

The ratio method of estimation automatically imputes for nonresponse. Data from companies that do not respond are excluded from both the weekly and the monthly totals for the sampled companies.

## Response Rates

The response rate as of the day after the filing deadline is about 80 percent for the EIA-161; 75 percent for the EIA-162; 95 percent for the EIA-163; 80 percent for the EIA-164; and greater than 95 percent for the EIA-165. However, more forms are received the next day, bringing the final response rates up. Late respondents are contacted by telephone. Nearly all of the major companies report on time. The nonresponse rate for the published estimates is usually between 2 percent and 5 percent.

# Note 1.4 EIA-170: Tanker and Barge Shipments of Crude Oil and Petroleum Products Between Districts

## Background

The EIA-170 survey collects data for calculation of monthly petroleum supply and disposition figures at U.S. and PAD District levels.

## Instrument and Design

This form is designed to collect data on total movements by tanker and barge of crude oil and petroleum products between PAD Districts or between PAD Districts and the Panama Canal, by shipping State and receiving State.

## Universe

The respondent universe of the EIA-170 consists of all known companies and plants that have custody of crude oil and petroleum products transported by tanker and barge between PAD Districts or between PAD Districts and the Panama Canal. There are currently about 60 respondents.

## **Collection Methods**

Survey data are collected by mail every month. The filing deadline is the 20th calendar day of the month following the report period. The response rate as of the filing deadline is about 98 percent. Late respondents are contacted by telephone. All responses are processed each month before release of the data for publication.

# **Note 1.5 ERA-60: Reports of Oil Imports into the United States and Puerto Rico**

## **Background**

The "Report of Oil Imports into the United States and Puerto Rico" (ERA-60) survey was designed by the Economic Regulatory Administration (ERA) of the Department of Energy to collect data on port of entry, country of origin, destination, and quantity of imported crude oil and petroleum products, as well as sulfur content and API gravity. All licensed importers and exporters of record are required to report. The "Shipments of Refined Products from Puerto Rico to the United States" (P-133-M-O) survey was designed to collect data on imports to the United States that are not covered by the ERA-60.

## **Universe**

The monthly submission of Form ERA-60 and P-133-M-O is required by all licensed importers and exporters of record into the United States and Puerto Rico. The respondent universe consisted of approximately 750 firms as of June 30, 1981. The respondent universe for these surveys is updated whenever an import license is granted by the Office of Oil Imports of the ERA.

## **Collection Methods**

The survey data are collected by mail each month. It is mandatory for each respondent to file the ERA-60/P-133-M-O by the 15th working day of the month following the reporting period. Resubmissions are received frequently and are processed when received.

## **Response Rates**

In December 1980, the survey had a response rate of 92 percent by the filing deadline. The universe was 640 at that time. (Because this is a dynamic survey, the universe is constantly changing.) Standard followup of nonrespondents is made to insure that all reports are received, since data are not imputed for nonrespondents. Response rate is generally 98-99% by the time the data are first published. Revised publications are not generated as standard operating procedure. The ERA-60 file is never closed; resubmissions are constantly received and processed.

# **Note 1.6 Census Import (IM-145) and Export (EM-522 and EM-594) Tabulations**

The foreign trade statistics program, conducted by the Bureau of the Census, involves compilation and dissemination of a large body of data relating to the imports and exports of the United States.

## **Import Statistics**

### **Coverage**

The import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico), without regard to whether or not a commercial transaction is involved. In general, the statistics record the physical movement of merchandise into the United States from foreign countries, with the exception of the following types of transactions that are excluded from the statistics:

1. Merchandise shipped in transit through the United States, when documented with Customs as an intratransit movement.
2. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; shipments between any of these outlying areas; and imports into U.S. possessions from foreign countries.
3. U.S. merchandise returned by U.S. Armed Forces for their own use.

#### **Source of Import Information**

The official U.S. import statistics are compiled by the Bureau of the Census from copies of the import entry and warehouse withdrawal forms that importers are required by law to file with Customs officials (Customs Forms 7501- 7506).

Imported petroleum is reported as "Imports for Consumption." Imports for consumption are a combination of entries for immediate consumption and withdrawals from warehouses for consumption. With certain exceptions as indicated above, these data generally reflect the total of commodities entered into U.S. consumption channels.

#### **Country and Area of Origin**

The country reported in the statistics as the country of origin is defined as the country where the merchandise was grown, mined, or manufactured. In instances where the country of origin cannot be determined, the transactions are credited to the country of shipment.

### **Export Statistics**

#### **Coverage**

The export statistics reflect both government and nongovernment exports of domestic and foreign merchandise from the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico) to foreign countries, without regard to whether or not the exportation involves a commercial transaction. In general, the statistics record the physical movement of merchandise out of the United States to foreign countries, with the exception of the following types of transactions:

1. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; between any of these outlying areas; and shipments from U.S. Possessions to foreign countries.
2. Merchandise shipped in transit through the United States from one foreign country to another, when documented as such with U.S. Customs.
3. Bunker fuels and other supplies and equipment for use on departing vessels, planes, or other carrier engaged in foreign trade.

#### **Source of Export Information**

The official U.S. export statistics are compiled by the Bureau of the Census primarily from copies of Shipper's Export Declarations. Shipper's Export Declarations are required to be filed with Customs officials, except when qualified exporters have been authorized to submit data in the form of magnetic tape, punched cards, or monthly Shipper's Summary Export Declarations directly to the Bureau of the Census.

#### **Country and Area of Destination**

The country of destination is defined as the country of ultimate destination or the country where the goods are to be consumed, further processed, or manufactured, as known to the shipper at the time of exportation. If the shipper does not know the country of ultimate destination, the shipment is credited to the last country to which the shipper knows that the merchandise will be shipped in the same form as it was when exported.

#### Collection Methods

Survey data are collected by mail every month. The filing deadline is the 20th calendar day of the month following the report period. The response rate as of the filing deadline is about 98 percent. Late respondents are contacted by telephone. All responses are processed each month before release of the data for publication.

## Note 1.5 ERA-60: Reports of Oil Imports into the United States and Puerto Rico

### Background

The "Report of Oil Imports into the United States and Puerto Rico" (ERA-60) survey was designed by the Economic Regulatory Administration (ERA) of the Department of Energy to collect data on port of entry, country of origin, destination, and quantity of imported crude oil and petroleum products, as well as sulfur content and API gravity. All licensed importers and exporters of record are required to report. The "Shipments of Refined Products from Puerto Rico to the United States" (P-133-M-O) survey was designed to collect data on imports to the United States that are not covered by the ERA-60.

### Universe

The monthly submission of Form ERA-60 and P-133-M-O is required by all licensed importers and exporters of record into the United States and Puerto Rico. The respondent universe consisted of approximately 750 firms as of June 30, 1981. The respondent universe for these surveys is updated whenever an import license is granted by the Office of Oil Imports of the ERA.

### Collection Methods

The survey data are collected by mail each month. It is mandatory for each respondent to file the ERA-60/P-133-M-O by the 15th working day of the month following the reporting period. Resubmissions are received frequently and are processed when received.

### Response Rates

In December 1980, the survey had a response rate of 92 percent by the filing deadline. The universe was 640 at that time. (Because this is a dynamic survey, the universe is constantly changing.) Standard followup of nonrespondents is made to insure that all reports are received, since data are not imputed for nonrespondents. Response rate is generally 98-99% by the time the data are first published. Revised publications are not generated as standard operating procedure. The ERA-60 file is never closed; resubmissions are constantly received and processed.

## Note 1.6 Census Import (IM-145) and Export (EM-522 and EM-594) Tabulations

The foreign trade statistics program, conducted by the Bureau of the Census, involves compilation and dissemination of a large body of data relating to the imports and exports of the United States.

### Import Statistics

#### Coverage

The import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico), without regard to whether or not a commercial transaction is involved. In general, the statistics record the physical movement of merchandise into the United States from foreign countries, with the exception of the following types of transactions that are excluded from the statistics:

1. Merchandise shipped in transit through the United States, when documented with Customs as an intransit movement.
2. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; shipments between any of these outlying areas; and imports into U.S. possessions from foreign countries.
3. U.S. merchandise returned by U.S. Armed Forces for their own use.

#### **Source of Import Information**

The official U.S. import statistics are compiled by the Bureau of the Census from copies of the import entry and warehouse withdrawal forms that importers are required by law to file with Customs officials (Customs Forms 7501- 7505).

Imported petroleum is reported as "Imports for Consumption." Imports for consumption are a combination of entries for immediate consumption and withdrawals from warehouses for consumption. With certain exceptions as indicated above, these data generally reflect the total of commodities entered into U.S. consumption channels.

#### **Country and Area of Origin**

The country reported in the statistics as the country of origin is defined as the country where the merchandise was grown, mined, or manufactured. In instances where the country of origin cannot be determined, the transactions are credited to the country of shipment.

### **Export Statistics**

#### **Coverage**

The export statistics reflect both government and nongovernment exports of domestic and foreign merchandise from the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico) to foreign countries, without regard to whether or not the exportation involves a commercial transaction. In general, the statistics record the physical movement of merchandise out of the United States to foreign countries, with the exception of the following types of transactions:

1. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; between any of these outlying areas; and shipments from U.S. Possessions to foreign countries.
2. Merchandise shipped in transit through the United States from one foreign country to another, when documented as such with U.S. Customs.
3. Bunker fuels and other supplies and equipment for use on departing vessels, planes, or other carriers engaged in foreign trade.

#### **Source of Export Information**

The official U.S. export statistics are compiled by the Bureau of the Census primarily from copies of Shipper's Export Declarations. Shipper's Export Declarations are required to be filed with Customs officials, except when qualified exporters have been authorized to submit data in the form of magnetic tape, punched cards, or monthly Shipper's Summary Export Declarations directly to the Bureau of the Census.

#### **Country and Area of Destination**

The country of destination is defined as the country of ultimate destination or the country where the goods are to be consumed, further processed, or manufactured, as known to the shipper at the time of exportation. If the shipper does not know the country of ultimate destination, the shipment is credited to the last country to which the shipper knows that the merchandise will be shipped in the same form as it was when exported.

## Note 2 Estimation

The geographic coverage of all estimates is the 50 United States and the District of Columbia, including adjacent areas of the outer continental shelf, excluding the Hawaiian Foreign Trade Zone.

### Note 2.1 Supply

The components of petroleum supply are field production, refinery production, imports, stock withdrawal or addition, crude oil used directly, and losses.

Field Production is the sum of crude oil (including lease condensate) production, natural gas processing plant production, and new supply (field production) of other liquids used by refineries.

Crude oil production is estimated based on data received from State conservation and revenue agencies. Reports of crude oil production from each of the 31 producing States are not received until several months after the other components of petroleum supply described in Explanatory Note 2.1 are available for publication. For an explanation of the crude oil estimation procedure used until the State reports are complete, see Explanatory Note 2.2.

Field production of natural gas plant liquids (NGPL), including finished petroleum products, is reported monthly on survey Form EIA-64, "Natural Gas Liquids Operation Report." Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. For survey description and other detail, see Explanatory Note 1.1.

Field production of natural gas plant liquids (NGPL), including finished petroleum products, is reported monthly on survey Form EIA-64, "Natural Gas Liquids Operations Report." Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. For survey description and other detail, see Explanatory Note 1.1.

Refinery Production of LRGs, ethane, and finished petroleum products is reported monthly on survey Form EIA-87, "Refinery Report." Published production of these products equals refinery production minus refinery input. Refinery production of unfinished oils and of motor and aviation gasoline blending components appears on a net basis under refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Refinery production is also reported weekly on survey Form EIA-161, "Refinery Report." See Explanatory Notes 1.2 and 1.3 for survey descriptions and other detail. It should also be noted that refineries do not report production of crude oil, natural gasoline, isopentane, unfractionated stream, plant condensate, or other hydrocarbons and alcohol.

Imports of crude oil and petroleum products are reported monthly on Form ERA-60, "Report of Oil Imports into the United States and Puerto Rico," and Form P-183-M-O, "Shipments of Refined Products (including unfinished oils) from Puerto Rico to the United States." In addition, the Census Bureau Tabulation IM-146 summarizes import data from Customs import declarations reported on Customs Forms 7501 and 7506. The most prominent difference between the EIA and Census systems appears in imports of liquefied petroleum gases (LPG), where Census data show a much higher level of imports than Energy Information Administration data. This occurs because the ERA-60 respondent frame was built by monitoring importers of licensed products and because LPGs are not licensed products. Therefore, respondents that only import LPGs have not been identified, and do not report these imports to the Department of Energy. Since these importers are required to file form 7501 with the U.S. Customs Service, EIA obtains data on imports of LPGs from Census Tabulation IM-146. Additional data taken from the IM-146 are relatively small quantities of naphtha and kerosene-type jet fuels, distillate fuel oils, and residual fuel oils withdrawn from bonded storage for use in international trade and for military offshore use. Even though these duty-free fuels are stored on United States shores, they did not enter the United States for domestic consumption and therefore are not included in the ERA-60 reporting system.

Imports are also reported weekly on survey Form EIA-165, "Imports Report." See Explanatory Notes 1.3, 1.5, and 1.6 for survey descriptions and other detail.

**Stock Withdrawal (+) or Addition (-)** is calculated by subtracting stocks at the end of the month from stocks at the beginning of the month. (Note: The beginning stocks of one month are equal to the ending stocks of the previous month.) A positive result (+) would represent a withdrawal from stocks and an increase in petroleum supplies distributed for domestic consumption. A negative result (-) would represent a buildup of stocks and reduce petroleum supplies distributed for domestic consumption. For survey forms used to make stock withdrawal or addition calculations see Explanatory Note 2.4.

**Unaccounted-for Crude Oil** is a balancing item that represents the difference between crude oil supply and disposition. Crude oil supply is the sum of field production, imports and stock withdrawal or addition, less crude used directly and losses. Crude oil disposition is the sum of exports and refinery input.

Unaccounted-for crude oil is calculated by subtracting crude oil supplies from crude oil disposition. A negative result indicates that refiners and exporters reported use of more crude oil than was reported to have been available to them. (This occurs, for example, when imports are undercounted due to late reporting or other problems.) A negative result would indicate that more crude oil was reported to have been supplied to refiners and exporters than they reported used. This calculation is performed for crude oil to ensure that product supplied for crude oil is always zero.

**Crude Oil Used Directly and Losses** is the sum of crude oil losses at refineries, crude oil burned at refineries, and crude oil burned on leases. Crude oil losses and consumption at refineries are reported on Form EIA-87, "Refinery Report." Crude oil burned on leases is reported on Form EIA-90, "Crude Oil Stocks Report." Crude oil burned on leases is divided into two categories: crude burned as residual fuel oil and crude burned as distillate fuel oil. Crude burned on leases appears as a negative supply to crude oil (a reduction in crude oil supplies) and as a positive supply to residual and distillate fuel oil (an increase to these supplies).

## Note 2.2: Domestic Crude Oil Production

Data for the Crude Oil Production System (COPS) are reported to the Department of Energy by each of the individual State conservation agencies, which collect crude oil production values for tax purposes. In addition, the U.S. Geological Survey reports the volume of crude oil that is produced offshore in Federally-owned waters. With the exception of six State conservation agencies, all of these reports are received monthly. After each calendar year, these monthly numbers are updated using the annual reports from the State conservation agencies and the U.S. Geological Survey. The six States that do not report monthly values are Indiana, New York, Ohio, Pennsylvania, West Virginia, and Wyoming. Monthly values are estimated for these States using the individual linear trends of their historical annual crude oil production values.

There is a time lag of approximately 3 to 4 months between the end of the reporting month and the time when the actual values are available for this publication. In order to provide more timely crude oil production estimates, the Department of Energy has established a series of statistical models that forecast the volume of crude oil production based on the historical production patterns. The models use Auto Regressive Integrated Moving Average (ARIMA) to analyze series of monthly crude oil production values collected over several years.

In order to provide detailed crude oil production information on both the PAD District level and for the major producing States, the total United States crude oil production volume was separated into nine distinct groupings. The nine different time series are the monthly reported crude oil production volumes for: (1) all the States in PAD District 1; (2) all the States in PAD District 2; (3) Texas; (4) Louisiana; (5) the States in PAD District 3 excluding Texas and Louisiana; (6) all the States in PAD District 4; (7) Alaska; (8) California; and (9) the States in PAD District 5 excluding Alaska and California. Monthly data collected beginning in January 1973 are used for each of these time series.

A separate ARIMA model is identified for each time series. New model parameters are estimated monthly for each of these nine updated time series. Then, these ARIMA models are used to forecast crude oil production volumes for the month of interest. These values are then aggregated into PAD District and national totals. The forecasts made during 1981 had an average error of less than 0.6 percent compared to the monthly crude oil production volumes eventually reported by the States.

## Note 2.3 Disposition

The components of petroleum disposition are refinery input, exports, and products supplied for domestic consumption.

Refinery Inputs of crude oil, NGPL and other liquids are reported monthly on survey Form EIA-87, "Refinery Report." Published inputs of unfinished oils, and motor and aviation gasoline blending components, equal refinery input minus refinery output. Refinery inputs of finished petroleum products are reported on a net basis under refinery production. Refinery inputs are also reported weekly on survey Form EIA-161, "Refinery Report." See Explanatory Notes 1.2 and 1.3 for survey description and other details.

Exports of crude oil and petroleum products are compiled from Census Bureau tabulations EM622 and EM694. Exports include crude oil shipments to Puerto Rico, the Virgin Islands, and the Hawaiian Foreign Trade Zone, which are obtained from refinery receipts reported on Form EIA-87.

Product supplied for each product is calculated by summing field production plus refinery production, plus imports, plus stock withdrawal or minus stock addition, plus crude oil used directly and losses (plus net receipts when calculated on a PAD District basis), minus refinery input, minus exports. This formula ensures that total disposition equals total supply. Products supplied indicates those quantities of petroleum products supplied for domestic consumption. Occasionally, the result for a product is negative when total disposition of that product exceeds total supply. Negative product supplied may occur for a number of reasons: (1) product reclassification has not been reported, (2) misreporting or delayed reporting of data, and (3) for calculations on a PAD District basis, incomplete coverage of interdistrict movements data compiled to calculate net receipts.

## Note 2.4 Stocks

Primary stocks of crude oil are the sum of ending stocks reported monthly on Form EIA-87, "Refinery Report," and Form EIA-90, "Crude Oil Stocks Report." Crude oil held in the Strategic Petroleum Reserve is included unless otherwise noted. Alaskan crude oil in transit is also included. Stocks of crude oil are also reported weekly on Form 161, "Refinery Report," and Form EIA-164, "Crude Oil Stocks Report." Primary stocks of petroleum products are summed from data reported on the Form EIA-64, "Natural Gas Liquids Operations Report," Form EIA-87, "Refinery Report," Form EIA-88, "Bulk Terminal Stocks Report," and Form EIA-89, "Pipeline Products Stocks Report." Primary stocks of petroleum products do not include secondary stocks held by dealers and jobbers, or stocks held by consumers. Petroleum product stocks are also reported weekly on Form EIA-161, "Refinery Report," Form EIA-162, "Bulk Terminal Stocks Report," and Form EIA-163, "Pipeline Products Stocks Report." For survey descriptions and other details see Explanatory Notes 1.1., 1.2, and 1.3.

## Note 2.5 Average Stock Levels

The graphs displaying monthly stock levels of petroleum products, crude oil, motor gasoline, distillate fuel oil, residual fuel oil, liquefied petroleum gases and ethane, and other products provide the user with recent data as well as a summary of data from the most recent 3 year period from January through December or from July through June. This summary takes the form of an "average range" that includes seasonal variation determined from a longer time period. The average range represents the historical pattern; it is not a forecast.



These curves are updated every 6 months effective January 1 or July 1 by basing the "average ranges" on a more recent time period. At that time, each 3-year data series will be adjusted by dropping the first 6 months and including the most recent 6 months.

For each data series, the monthly seasonal factors were estimated by means of a seasonal adjustment technique developed at the Bureau of Census (Census X-11). The seasonal factors were assumed to be stable (i.e., unchanging from year to year) and additive (i.e., the series is deseasonalized by subtracting the seasonal factor for the appropriate month from the reported stock levels). The intent of deseasonalization is to remove only seasonal variation from the data. Thus, a deseasonalized series would contain the same trends and irregularities as the original data. For crude oil stocks, the derived seasonal factors were very small relative to crude oil stock levels. Therefore, the seasonal factors for crude oil stock levels were set to zero. The seasonal factors for total petroleum (crude and products), distillate fuel oil, residual fuel oil, liquefied petroleum gases and ethane, and other products were derived using monthly data from 1974-1980. For motor gasoline, the seasonal factors were based on monthly data from 1976, 1978, 1979 and 1980. In 1977, there was virtually no seasonal behavior in motor gasoline stocks. Monthly stock levels stayed at the same high level for the entire year. In addition, the seasonal patterns in 1973 and 1974 appeared to be different from those in recent years. It was therefore assumed that the seasonal patterns in 1973, 1974, and 1977 were not representative of the recent past, and these years were not used in the determination of seasonal patterns for motor gasoline stocks. Because of these differences in the year-to-year seasonal fluctuation of motor gasoline, the evidence for the illustrated seasonal patterns for total petroleum (crude and products), crude oil, distillate fuel oil, residual fuel oil, liquefied petroleum gases and ethane, and other products is stronger than is the evidence for the illustrated seasonal patterns for motor gasoline.

In some cases, these seasonal patterns do not show a smooth transition from month to month. For example, the June factor for residual fuel oil is slightly less than the May and July values, making a bump in the curve. As there is little difference in the magnitude of these seasonal factors, it is possible that this variation is due to the small number of observations (7 years) and the data variability.

After seasonal factors are derived, the most recent 3 year period (from January through December or from July through June) is deseasonalized. The average of the deseasonalized 36-month series determines the midpoint of the deseasonalized average band. The standard error of the deseasonalized 36 months is calculated adjusting for extreme data points. The width of the "average range" is twice this standard error.

The upper curve of the "average range" is defined as the average plus the seasonal factors plus the standard error. The lower curve is defined as the average plus the seasonal factors minus the standard error.

## Note 2.6 Movements

Movements of crude oil between PAD Districts are reported on Form EIA-170, "Tanker and Barge Report." Petroleum product movements are reported on Forms EIA-170 and EIA-89, "Pipeline Products Report." Net receipts are calculated by summing total movements into and total movements from each PAD District by pipelines, tankers, and barges, and subtracting for the difference. Movements of crude oil by pipeline are not reported. For survey descriptions and other detail, see Explanatory Notes 1.2 and 1.4.

## Note 2.7 Preliminary Monthly Statistics

Data from the Weekly Petroleum Reporting System (Forms EIA-161, 162, 163, 164 and 165) are used to estimate the most recent monthly values for the historical statistics. Since some of the weekly reporting periods overlap 2 adjacent months, it is necessary to use weighting factors in the calculation of the monthly values.

To calculate monthly estimates of crude oil and petroleum product imports, crude oil input to refineries, and production of petroleum products for a specific month, the weekly estimates are weighted by the number of days of that month included in each week, then summed.

End-of-month stock levels of crude oil and the major products (motor gasoline, distillate fuel and residual fuel) are calculated in a similar manner, but use only the two weekly reporting periods that cover the end-of-week stocks before and after the end of the month. The end-of-month stock level is calculated by first calculating the stock change between the 2 weeks. The daily stock change between the two end-of-week stock levels is then calculated. This number is multiplied by the weighting factor of earlier of the 2 weeks (the week that covers the last day of the month of interest). This change is added to the earlier of the two end-of-week stock levels to estimate the end-of-month stock level.

Preliminary monthly estimates of domestic crude oil production are calculated as described in Explanatory Note 2.2.

### Note 3 Accuracy of Petroleum Supply Data

Early in 1981, the Energy Information Administration completed an assessment of the accuracy of principal petroleum supply data series.<sup>1</sup> This assessment concentrated on two methods of analysis:

- Comparisons between EIA's final annual estimates published in the *Petroleum Statement Annual (PSA)* and annual estimates from independent sources.

- Comparisons between EIA's final monthly estimates published in the *PSA* and EIA's earlier estimates published in the *Monthly Petroleum Statistics Report* and the *Petroleum Statement, Monthly* (predecessor of the *Monthly Petroleum Statement*).

Selected excerpts from these comparisons are presented below.

#### Comparisons of Annual Estimates

All of the systems that provide data for the *Petroleum Supply Monthly*, except for the weekly systems, try to collect data from the entire universe of their potential respondents. They do not sample, and have no sampling errors. Inaccuracies in the data still occur because of problems such as incomplete lists of respondents, errors in the responses, and conceptual errors in the design of the data systems. Such inaccuracies are hard to identify and even harder to quantify. Some understanding of the overall accuracy of the estimates can be achieved by comparing estimates derived from independent sources of data, as shown in the following tables. Close agreements among annual estimates from several independent sources support the conclusion that the estimates are accurate, and accuracy in the annual estimates implies accuracy in the monthly estimates that comprise the annual estimates.

#### Crude Oil Production

Comparisons among independent estimates of annual crude oil and lease condensate production lead to the conclusion that the *PSA* estimates are probably accurate to within 1 percent.

#### Crude Oil Imports

Comparisons among independent estimates of annual crude oil imports lead to the conclusion that the *PSA* estimates are probably accurate to within 1 percent. This conclusion is supported by a study of EIA and Customs/Census import data performed for EIA.<sup>2</sup>

#### Motor Gasoline Supplied

Comparisons among independent estimates of the annual volume of motor gasoline supplied for domestic use show that differences in the estimates grew between 1977 and 1979. By 1979, the EIA estimate of sales by refiners and the Environmental Protection Agency's estimate of production had grown about 5-7 percent larger than the comparable *PSA*, Lundberg, and American Petroleum Institute (API) estimates. Research conducted by EIA in 1979 and 1980<sup>3</sup> confirmed that the lower

<sup>1</sup>An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0292, June 1981.

<sup>2</sup>Maxima Corporation, *Petroleum Imports Reporting Systems, Preliminary Draft*, (Silver Spring, Maryland: February 1980). Prepared for the Office of Energy Information Validation, Energy Information Administration, U.S. Department of Energy, Washington, D.C.

<sup>3</sup>Office of Energy Information Validation, Energy Information Administration, U.S. Department of Energy, *An Evaluation of Published EIA Gasoline Supply Estimates* (Washington, D.C.: April 1980).

estimates were inaccurate, and identified changes in the petroleum industry that had an adverse effect on the PSA estimate. During 1980, EIA developed and tested improved procedures for collecting petroleum supply data, and implemented them in January 1981. (See Explanatory Note 4.)

#### Distillate Fuel Oil Supplied

Comparisons among independent estimates of the annual volume of distillate fuel oil supplied for domestic use lead to the conclusion that the PSA estimates are probably accurate to within 1 to 2 percent.

#### Residual Fuel Oil Supplied

Comparisons among independent estimates of the annual volume of residual fuel oil supplied for domestic use seem to show sizable and consistent differences between the EIA estimates of sales by refiners and the PSA and API estimates. When imports of residual fuel oil by nonrefiners are added to the refiner sales, however, the difference between refiner sales and the PSA estimates are narrowed to within 1 percent. The comparisons therefore lead to the conclusion that the PSA estimates are probably accurate to within 1 to 2 percent.

#### Comparison of Estimates of the Volume of Crude Oil and Lease Condensate Production, 1977-1979

	Estimated Volume of Production in Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Comparative Estimate as a Percent of the PSA Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from Petroleum Statement Annual <sup>b</sup>	3,121	3,178	3,009	///	///	///
Comparative Estimates						
American Petroleum Institute Estimate from API Monthly Statistical Report <sup>c</sup>	3,130	3,214	3,021	100.3%	101.1%	100.4%
Census Estimate from the Annual Survey of Oil and Gas <sup>d</sup>	—	3,143	3,018	—	99.1%	100.2%
Oil and Gas Journal Estimates <sup>e</sup> of Total Production derived from Monthly Data	3,168	3,165	3,005	101.5%	99.8%	99.9%
EIA Estimate from Annual Survey of Oil and Gas Reserves (EIA-23) <sup>f</sup>	3,102	3,144	3,001	99.4%	98.9%	99.7%

/// = Not applicable

— = Not available

<sup>a</sup>Volumes are rounded to the nearest million barrels.

<sup>b</sup>From Table 6 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979.

<sup>c</sup>From issues of the American Petroleum Institute's *Monthly Statistical Report*. The annual values were obtained by summing the monthly values for each of the twelve-month periods.

<sup>d</sup>From Table 1, p.2 of the Bureau of Census' *Annual Survey of Oil and Gas*, 1978.

<sup>e</sup>From issues of the *Oil and Gas Journal*. Monthly estimates are in thousands of barrels per day. They are converted to millions of barrels by dividing by 1,000 and multiplying by the number of days in the reporting period.

<sup>f</sup>From EIA's *U.S. Crude Oil and Natural Gas Reserves 1979 Annual Report* (Table 19, p. 33), *1978 Annual Report* (Table 16, p. 20), and *1977 Annual Report* (Table 22, p.26).

Geographic coverage: the 50 United States and District of Columbia with adjacent areas of the Outer Continental shelf.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

## Comparison of Estimates of the Volume of Crude Oil Imports, 1977-1979

	Volume of Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Comparative Estimates as a Percent of the Primary Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate of Receipts at Ports of Entry (ERA-60) from <i>Petroleum Statement, Annual</i> <sup>b</sup>	2,380	2,320	2,414	///	///	///
<u>Comparative Estimates</u>						
American Petroleum Institute Estimate of Receipts as Reported by Refiners <sup>c</sup>	2,346	2,323	2,360	98.6%	100.1%	97.8%
Customs/Census Estimate of Receipts at Ports of Entry (Customs Forms 7501 and 7502) <sup>d</sup>	2,415	2,338	2,431	101.5%	100.8%	100.7%
EIA Estimate of Inputs of Foreign Crude at Refineries (ETA-87) <sup>e</sup>	2,364	2,334	2,431	99.3%	100.6%	100.7%

/// = Not applicable

<sup>a</sup>Volumes are rounded to the nearest million barrels.

<sup>b</sup>From Table 1 in EIA's *Petroleum Statement Annual* 1977, 1978, 1979. This table also includes imports for the Strategic Petroleum Reserve (SPR) which were 7.5 million in 1977, 88.8 million in 1978, and 24.4 million in 1979.

<sup>c</sup>Estimate equals the sum of the annual estimate of imports derived from API's *Monthly Statistics Report* (which excludes imports for SPR), and the EIA estimates for imports for the SPR which are listed in footnote b above. The annual estimates from API data are equal to the sum of the API monthly estimates weighted by the number of days in each month.

<sup>d</sup>Data on imports to Puerto Rico which are included in the sources for these estimates have been excluded from these estimates in keeping with the geographic coverage of the table. Data are from computer printouts of the Bureau of Census Report IM-245-X dated April 3, 1980 (1977 and 1978 data) and December 19, 1980 (1979 data).

<sup>e</sup>Estimate equals refinery inputs of foreign crude plus (minus) stock increases (decreases) of foreign crude. The data for the computation are published in EIA's *Petroleum Statement, Annual*. The stock changes (all increases) are derived from data on stocks of crude oil at refineries, bulk terminals, and pipelines as reported on Form EIA-80, plus the increase in the SPR. This estimate excludes crude oil imported and not used as refinery input.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0292.

**Comparison of Estimates of the Volume of Motor Gasoline Supplied for Domestic Use, 1977-1979**

	Volume in Millions of 42-U.S. Gallon Barrels*			Volume Supplied as a Percent of the PSA Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement, Annual</i> <sup>b</sup>	2,673	2,711	2,825	///	///	///
<b>Comparative Estimates</b>						
EIA Estimate of Sales by Refiners (P-306) <sup>c</sup>	2,708	2,792	2,671	105.2%	103.0%	101.8%
Environmental Protection Agency Estimate derived from Production Data <sup>d</sup>	2,766	2,851	2,706	107.6%	106.2%	103.1%
Lundberg Surveys, Inc. Estimate of U.S. Motor Gasoline Sales <sup>e</sup>	2,631	2,746	2,655	102.3%	101.3%	101.2%
American Petroleum Institute Estimate of Deliveries <sup>f</sup>	2,579	2,697	2,612	100.2%	99.6%	99.5%

/// = Not applicable

\*Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>b</sup>Derived from Table 2 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979.

<sup>c</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products* 1977, 1978, 1979.

<sup>d</sup>The estimate shown is derived by substituting EIA Domestic Production values with values of domestic production tabulated from the Environmental Protection Agency Bq. Form 3520-2, "Lead Additive Report for Refineries." The EPA production estimates are 2,694 million barrels in 1977, 2,767 in 1978, and 2,848 in 1979 as compared from a summary sheet provided by Mr. Bob Summerhayes of EPA.

<sup>e</sup>From the mid-June issues of the "National Petroleum News," 1979 and 1980.

<sup>f</sup>API publishes monthly estimates in thousands of barrels per month of the volume of motor gasoline delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of motor gasoline multiplied by the number of days per month.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0292.

**Comparison of Estimates of the Volume of Distillate Fuel Oil (Including Kerosene) Supplied for Domestic Use, 1977-1979**

	Volume in Millions of 42-U.S. Gallon Barrels*			Volume Supplied as a Percent of the PSA Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement Annual</i> <sup>b</sup>	1,899	1,907	1,275	///	///	///
<b>Comparative Estimates</b>						
EIA Estimate of Sales by Refiners (P-306) <sup>c</sup>	1,282	1,275	1,242	101.0%	97.6%	97.4%
American Petroleum Institute Estimate of Deliveries <sup>d</sup>	1,291	1,300	1,277	101.7%	99.5%	100.2%

/// = Not applicable

\*Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>b</sup>Derived from Table 2 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979.

<sup>c</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products*, 1977, 1978, 1979.

<sup>d</sup>API publishes monthly estimates in thousands of barrels per month of the volume of distillate and kerosene delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of distillate and kerosene multiplied by the number of days per month.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0292.

Comparison of Estimates of the Volume of Residual Fuel Oil Supplied for Domestic Use, 1977-1979.

	Volume in Millions of 42-U.S. Gallon Barrels*			Volume Supplied as a Percent of the PSA Estimates		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement, Annual</i> <sup>2</sup>	1,024	1,095	1,109	///	///	///
<b>Comparative Estimates</b>						
EIA Estimate of Sales by Refiners (P-306) <sup>3</sup>	796	832	847	80.8%	79.6%	80.1%
American Petroleum Institute Estimate of Deliveries <sup>4</sup>	1,044	1,101	1,114	102.0%	100.5%	100.4%

/// = Not Applicable

\*Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>2</sup>Derived From Table 2 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979. Refinery fuel use, subtracted from the figures in the source referenced below, has been reinstated in these estimates.

<sup>3</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products*, 1977, 1978, 1979.

<sup>4</sup>API publishes monthly estimates in thousands of barrels per month of the volume of residual fuel oil delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of residual fuel oil multiplied by the number of days per month.

Geographic Coverage: the 50 United States and the District of Columbia.

SOURCE: An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0282.

## Comparisons of Monthly Estimates Over Time

Inaccuracies in petroleum data resulting from incomplete or delayed reports from respondents and from data processing errors are usually eliminated from the final PSA estimates. Such inaccuracies can still have important effects on the monthly estimates published in the *Petroleum Supply Monthly* and its predecessors. The following tables compare the initial monthly estimates published in the *Monthly Petroleum Statistics Report* and the *Petroleum Statement, Monthly* with the final monthly estimates published in the PSA. During 1977 - 1979, the *Monthly Petroleum Statistics Report* was published about 60 days after the end of the reporting month, and the *Petroleum Statement, Monthly* was published about 120-150 days after the end of the reporting month. The tables show that, both in terms of bias and in terms of standard deviation, the later estimates are consistently more accurate than the earlier estimates. In spite of this, the earlier estimates may have been more valuable to users of energy information because of the large difference in timeliness.

For purposes of comparison, the *Petroleum Supply Monthly* is scheduled to be published on about the same time lag as the *Monthly Petroleum Statistics Report*. Caution should be exercised, however, in drawing conclusions from this similarity. The *Petroleum Supply Monthly* uses improved data processing procedures developed and successfully implemented during 1981. In addition, since 1979, EIA has greatly improved the accuracy of its 60-day crude oil production estimates and is making progress in improving the accuracy of its 60-day import estimates.

**Initial Monthly Estimates of Production, Stocks, and Imports of Crude Oil As A Percent of EIA's Final Published Estimates \***  
January 1977 - December 1979

	Production During Month		Primary Stocks At End of Month		Imports During Month	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	# 98.7%	1.6%	# 98.3%	1.4%	# 96.4%	2.4%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	# 99.6%	0.6%	100.0%	0.1%	# 98.4%	1.8%

**Initial Monthly Estimates of Products Supplied for Domestic Use as A Percent of EIA's Final Published Estimates \***  
January 1977 - December 1979

	Motor Gasoline		Distillate Fuel Oil		Residual Fuel Oil	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	99.9%	1.8%	99.9%	2.3%	# 97.9%	2.7%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	100.0%	0.3%	99.7%	0.5%	99.4%	1.2%

**Initial Monthly Estimates of End-of-Month Primary Stocks As a Percent of EIA's Final Published Estimates \***  
January 1977 - December 1979

	Motor Gasoline		Distillate Fuel Oil		Residual Fuel Oil	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	99.7%	0.8%	99.7%	1.1%	100.1%	0.7%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	99.9%	0.2%	100.0%	0.1%	100.1%	0.6%

# Represents a difference from 100% found to be statistically significant at the 95% level of confidence (n = 36).

\*Final monthly estimates are from the "Petroleum Statement, Annual" for 1977, 1978 and 1979. The mean percent is calculated as follows: each preliminary estimate is first expressed as a percent of EIA's final published estimate, these are then summed and the sum is divided by the number of estimates. The standard deviation is the square root of the quantity computed by summing the squared deviation of the percents from the mean percent and then dividing by the number of percents.

<sup>b</sup>Based on 36 initial estimates appearing in issues dated January 1977 - December 1979.

<sup>c</sup>Based on 36 initial estimates appearing in issues dated January 1977 - December 1979.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*  
DOE/EIA-0292.

## Note 4 Changes in Petroleum Industry Reporting

Petroleum statistics contained in this report for all years through 1980 were developed using definitions, concepts, reporting procedures and aggregation methods that are consistent with those developed by the U.S. Bureau of Mines. Research conducted by the Energy Information Administration in 1979 and 1980 indicated that changes had occurred in the petroleum industry that were not being adequately reflected in EIA's reporting systems.

EIA reporting forms, definitions, and procedures were modified beginning in January 1981 to describe industry operations more accurately. Unfortunately, empirical information is not available to precisely measure the data shortcomings throughout 1980. However, estimates of the magnitudes of differences in the major data series are described below to form a basis for comparing 1979, 1980, and 1981 data.

### Motor Gasoline

Prior to 1979, the EIA product-supplied series for motor gasoline was consistently about 2 percent lower than the Federal Highway Administration (FHWA) gasoline-sales data series, which is derived from State tax receipts. This difference increased to about 4 percent in 1979 and 5 percent in 1980. There are two primary causes for this growing difference. First, refinery operations, particularly the flows of unfinished oils and the redesignation of some finished products, were not being accurately described on the EIA survey forms. Second, a large amount of gasoline was being produced away from refineries at "downstream blending stations" to take advantage of provisions in regulations governing the amount of lead that could be added. These blending stations were not reporting gasoline production to the EIA until the data system was changed in January 1981.

Quantitative estimates of the magnitude of the difference—in EIA's gasoline product supplied data in 1979 and 1980 have been made by the EIA and the American Petroleum Institute (API). The following table provides 1979 and 1980 data as published in the *Petroleum Statement Annual*, as well as EIA and API estimates of "recast" motor gasoline product supplied. EIA recast estimates were based upon preliminary monthly information in the *Monthly Petroleum Statement*. The ranges displayed in the EIA column reflect uncertainty in the estimates. Also shown are the FHWA motor gasoline sales statistics for those years. EIA has recently published a study of the quality of these FHWA data.<sup>1</sup>

<sup>1</sup>Office of Energy Information Validation, Energy Information Administration, U.S. Department of Energy, *Error Profile of the Motor Fuel Taxation Data used to Establish and Monitor State Emergency Conservation Targets* (Washington, D.C.: December, 1981).



**Finished Motor Gasoline Product Supplied on Old and New Basis  
(Thousand Barrels per Day)**

	1979				1980			
	EIA Reported	API Recast	EIA Recast	FHWA <sup>1</sup>	EIA Reported	API Recast	EIA Recast	FHWA <sup>1</sup>
Jan	6,830	7,230	7,084- 7,246	6,984	6,823	6,789	6,630- 6,791	6,672
Feb	7,254	7,496	7,389- 7,668	7,538	6,596	6,983	6,831- 7,003	6,830
Mar	7,229	7,414	7,301- 7,463	7,316	6,406	6,753	6,607- 6,768	6,713
Apr	7,056	7,300	7,187- 7,353	7,375	6,800	7,014	6,886- 7,052	6,981
May	7,213	7,429	7,313- 7,475	7,428	6,729	6,964	6,823- 6,984	7,044
Jun	7,191	7,483	7,350- 7,516	7,441	6,557	6,966	6,824- 6,991	7,049
Jul	6,902	7,241	7,105- 7,266	7,299	6,743	6,973	6,960	7,132
Aug	7,330	7,546	7,426- 7,588	7,619	6,648	6,841	6,828	7,090
Sep	6,881	7,122	7,016- 7,282	7,232	6,510	6,692	6,962	6,685
Nov	6,791	7,068	6,966- 7,122	7,142	6,234	6,507	6,516	6,961
Dec	6,730	7,106	6,966- 7,127	7,064	6,632	6,948	6,936	6,953
Average	7,034	7,302	7,183- 7,347	7,309	6,579	6,882	6,806- 6,889	6,925

<sup>1</sup>FHWA gasoline statistics published in their 1979 Table MF-33G, 08-05-80, contain aviation gasoline as well as motor gasoline. Only motor gasoline data are included in published 1980 data. Consequently, the 1979 data shown above were reduced by subtracting aviation gasoline product supplied quantities as published by EIA in the 1979 *Petroleum Statement Annual*. The 1980 FHWA data published in their 1980 Table MF-33GA, August 1981, did not require this adjustment.

#### Distillate and Residual Fuel Oil

Distillate and residual fuel oil refinery production statistics through 1980 were adjusted to account for an imbalance between unfinished oil supply and disposition. The reported quantities of refinery inputs of unfinished oils typically exceed the available supply of unfinished oils. It has been assumed that this occurs when distillate and residual fuel oil produced by a refinery is shipped to another refinery, where it is treated as unfinished oil. This oil is then reprocessed rather than used or sold as distillate or residual fuel oil.

For many years (including 1980), the difference between unfinished oil disposition and supply was subtracted from distillate and residual fuel oil production to adjust for this discrepancy. Two-thirds of the difference was applied to distillate, and one-third to residual fuel oil.

Beginning in January 1981 this adjustment was discontinued because there was not sufficient empirical evidence to support it. The following table presents distillate and residual fuel oil refinery production in 1980 as published (adjusted) and on the same basis as 1981 statistics are now being completed (unadjusted) to permit comparison between 1980 and 1981 data series. Adjusted distillate and residual fuel oil product supplied volumes differ from the unadjusted volumes by the same amounts as the adjusted and unadjusted production volumes.

Adjusted and Unadjusted Refinery Production, and Unadjusted Product Supplied of Distillate and Residual Fuel Oils, by Month for 1979 and 1980 (Thousand Barrels Per Day)

1979

Month	Distillate Fuel Oil				Residual Fuel Oil			
	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied
Jan.	3,043	3,108	65	4,646	1,912	1,946	34	3,594
Feb.	2,888	2,945	57	4,869	1,792	1,822	30	3,625
Mar.	3,019	3,026	7	3,671	1,719	1,723	4	3,243
Apr.	2,945	2,978	32	3,048	1,639	1,656	17	2,524
May	3,066	3,093	27	3,025	1,586	1,600	14	2,517
Jun.	3,153	3,187	35	2,743	1,548	1,566	18	2,601
Jul.	3,305	3,344	38	2,601	1,575	1,594	20	2,471
Aug.	3,321	3,359	38	2,799	1,584	1,603	20	2,570
Sep.	3,354	3,306	-48	2,599	1,627	1,602	-26	2,584
Oct.	3,251	3,217	-34	3,085	1,629	1,612	-17	2,623
Nov.	3,239	3,200	-39	3,208	1,736	1,716	-20	2,795
Dec.	3,221	3,238	17	3,725	1,894	1,903	9	3,022
Average	3,152	3,169	16	3,327	1,687	1,696	8	2,894

1980

Month	Distillate Fuel Oil				Residual Fuel Oil			
	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied
Jan.	3,013	3,093	80	3,794	1,771	1,812	41	3,108
Feb.	2,766	2,868	122	3,834	1,773	1,836	63	3,168
Mar.	2,557	2,690	133	3,312	1,584	1,652	68	2,726
Apr.	2,480	2,554	94	2,729	1,595	1,643	48	2,482
May	2,474	2,610	136	2,538	1,509	1,579	70	2,305
Jun.	2,646	2,721	75	2,392	1,576	1,613	38	2,359
Jul.	2,689	2,783	94	2,343	1,480	1,528	48	2,339
Aug.	2,461	2,582	121	2,258	1,444	1,506	62	2,348
Sep.	2,686	2,726	40	2,327	1,495	1,516	21	2,380
Oct.	2,689	2,650	-39	2,961	1,512	1,543	31	2,258
Nov.	2,708	2,825	120	3,069	1,579	1,641	62	2,513
Dec.	2,891	3,062	161	3,776	1,660	1,743	83	2,762
Average	2,661	2,764	103	2,969	1,580	1,634	54	2,562

Total Petroleum Products

The imbalance between the supply and disposition of unfinished oils is now reported as part of the reclassified products (line 39) in the U.S. Petroleum Balance (Table 1). Imbalances between the supply and disposition of gasoline blending components comprise the remainder of the reclassified in Table 1. These imbalances are reported as negative product supplied in the Other Liquids section of the table of Supply and Disposition Statistics (Table 2). Since these changes only involve redistribution of the volumes of gasoline, distillate and residual fuel oil, gasoline blending components, and unfinished oils, the total volume of petroleum products supplied remains unaffected by them.

## Note 5 Notes on Tables

**5.1 Crude Oil and Petroleum Products Overview** statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Crude Oil and Petroleum Products Stock Withdrawal (+) or Addition (-), Petroleum Products Supplied, Total Imports, Crude Oil Imports, Total Exports, and Crude Oil Exports appear as labeled in Table 4. Total Production and Crude Oil Production appear under Field Production in Table 4.

- Natural Gas Plant Production is the sum of Natural Gas Plant Liquids and Finished Petroleum Products Field Production in Table 4.

- Petroleum Products Imports is the sum of Natural Gas Plant Liquids and LRGs, Other Liquids, and Finished Petroleum Products Imports in Table 4.

- Petroleum Products Exports is the sum of Natural Gas Plant Liquids and LRGs, Other Liquids, and Finished Petroleum Products Exports in Table 4.

- Total Crude Oil and Petroleum Products Ending Stocks appear in thousands of barrels in Table 2.

**5.2 Crude Oil Supply and Disposition** statistics on the referenced line appear in Table 1 of the Detailed Statistics, except where noted.

- Total Domestic Field Production, Alaskan Field Production, SPR Imports, Other Imports (synonymous with Imports Gross Excl. SPR), SPR and Other Primary Stocks Withdrawal (+) or Addition (-), Unaccounted For Crude Oil, Refinery Inputs, and Exports appear as labeled in Table 1.

- SPR Ending Stocks and Other Primary Ending Stocks (synonymous with stocks excluding SPR) appear in thousands of barrels in Table 1.

- Total Crude Oil Ending Stocks appear in thousands of barrels in Table 2.

- Total Imports appear in Table 4.

**5.3 Finished Motor Gasoline Supply and Disposition** statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.

- Imports, Stock Withdrawal (+) or Addition (-), Exports, and Product Supplied appear as labeled in Table 4.

- Unleaded Percent of Total Product Supplied represents the ratio of finished unleaded motor gasoline product supplied to total finished motor gasoline product supplied, multiplied by 100 and rounded to the nearest tenth.

- Ending Stocks appear in thousands of barrels in Table 2.

**5.4 Distillate and Residual Fuel Oil Supply and Disposition** statistics on the referenced lines appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.

- Imports, Stock Withdrawal (+) or Addition (-), Crude Used Directly, Exports, and Product Supplied appear as labeled in Table 4.

- Ending Stocks appear in thousands of barrels in Table 2.

**5.5 Liquefied Petroleum Gases and Ethane** statistics represent the aggregation of statistics on ethane, propane, butane, butane-propane mixtures, ethane-propane mixtures, and isobutane. The statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.
- Imports, Stock Withdrawal (+) or Addition (-), Refinery Inputs, Exports, and Product Supplied appear as labeled in Table 4.
- Ending stocks appear in thousands of barrels in Table 2.

5.6 Other Petroleum Products Supply and Disposition statistics represent the aggregation of statistics on natural gasoline, isopentane, unfractionated stream, plant condensate, other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, and residual fuel oil. The statistics on the referenced line are aggregated from Table 4 of the Detailed Statistics, except where noted.

- Total Production is the aggregated sum of Field Production and Refinery Production in Table 4.
- Imports, Stock Withdrawal (+) or Addition (-), Refinery Inputs, Exports, and Product Supplied are aggregated from Table 4.
- Ending stocks are aggregated from ending stocks in thousands of barrels in Table 2.

#### Note 5.7 Table 1. U.S. Petroleum Balance

• Lines (1) through (3) of Table 1: Crude oil (including lease condensate) production for "Alaska," "Lower 48 States," and "Total U.S." are calculated by calling the conservation agency in Alaska for Alaskan crude oil production during the month, estimating crude oil production in the United States (see Explanatory Note 2.2), and taking the difference to equal production in the lower 48 states.

- Line (5) of Table 1: SPR imports are reported on Survey Form ERA-60.
- Line (12) of Table 1: "Total Other Sources" equals crude oil stock withdrawal (+) or addition (-) plus unaccounted for crude oil plus crude used as fuel and losses in Table 2.
- Line (14) of Table 1: Natural gas plant liquids (NGPL) "Production" equals field production of natural gas plant liquids (NGPL) plus field production of finished petroleum products in Table 2.
- Line (15) of Table 1: NGPL "Imports" equals the sum of the imports of natural gasoline and isopentane, unfractionated stream, and plant condensate imports in Table 2.
- Line (16) of Table 1: NGPL "Stock Withdrawal (+) or Addition (-)" is equal to the sum of stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate in Table 2.
- Line (17) of Table 1 equals the sum of lines (14), (15), and (16) of Table 1.
- Line (18) of Table 1: unfinished oils and gasoline blending components "Stock Withdrawal (+) or Addition (-)" equals stock withdrawal (+) or addition (-) for other hydrocarbons and alcohol, for unfinished oils, motor gasoline blending components, and aviation gasoline blending components.
- Line (20) of Table 1: "Other Hydrocarbons and Alcohol New Supply" equals the field production of same in Table 2.
- Line (21) on Table 1: "Refinery Processing Gain" is a balancing item equal to total refinery production minus total refinery input in Table 2.
- Line (22) on Table 1: "Crude Used Directly" equals the sum of crude oil used directly as distillate and residual fuel oils in Table 2.
- Line (23) of Table 1: "Total Other Liquids" equals the sum of lines (18) through (22) of Table 1.
- Line (24) of Table 1: "Total Production of Products" equals crude oil input to refineries plus field production of NGPL and finished petroleum products; plus imports of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or

addition (-) of other hydrocarbons and alcohol, unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus imports of unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus field production of other hydrocarbons and alcohol; plus total refinery production; minus total refinery input; plus crude oil used as distillate and residual fuel oils in Table 2.

- Line (25) of Table 1: "Gross Imports of Refined Products" equals imports of LPG and ethane plus imports of finished petroleum products in Table 2.

- Line (26) of Table 1: "Exports of Refined Products" equals exports of LPG and ethane plus exports of finished petroleum products in Table 2.

- Line (27) of Table 1: "Net Imports of Refined Products" equals the difference between lines (25) and (26) of Table (1).

- Line (28) of Table 1: "Total New Supply of Products" equals crude oil input to refineries plus field production of NGPL and finished petroleum products; plus imports of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of other hydrocarbons and alcohol, unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus imports of unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus field production of other hydrocarbons and alcohol; plus total refinery production; minus total refinery input; plus crude oil used as distillate and residual fuel oils; plus imports of LPG and ethane and finished petroleum products; minus exports of LPG and ethane and finished petroleum products in Table 2.

- Line (29) of Table 1: "Refined Products Stocks Withdrawal (+) or Addition (-)" equals the sum of stock withdrawal (+) or addition (-) for LPG and ethane, and finished petroleum products in Table 2.

- Line (30) of Table 1: "Total Petroleum Products Supplied for Domestic Use" equals total products supplied in Table 2.

- Lines (31) through (37) of Table 1 equal the respective products supplied in Table 2.

- Line (38) of Table 1: "Other Products Supplied" equals the sum of natural gasoline and isopentane, unfractionated stream, plant condensate, aviation gasoline, naphtha < 400 Deg. F for petrochemical feedstock uses, other oils > 400 Deg. F. for petrochemical feedstock use, special naphthas, lubricants, waxes, coke, asphalt, road oil, still gas, and miscellaneous products supplied in Table 2.

- Line (39) of Table 1: "Total Reclassified" is a balancing item equal to the sum of unfinished oils, motor gasoline blending components, and aviation gasoline blending components products supplied in Table 2.

- Line (40) of Table 1: "Total Product Supplied" is equal to total products supplied in Table 2.

- The sum of lines (41) and (42) of Table 1, stocks of "Crude Oil and Lease Condensate (Excluding SPR)" and stocks held by the "Strategic Petroleum Reserve," equals ending stocks of crude oil in Table 2. SPR stocks are reported on Form EIA-90.

- Line (46) of Table 1, stocks of "Refined Products," equals the sum of LPG and ethane and finished petroleum product stocks in Table 2.